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Cooperative Extension Work in Agriculture and Home Economics

Extension Service Circular 281

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January 1938

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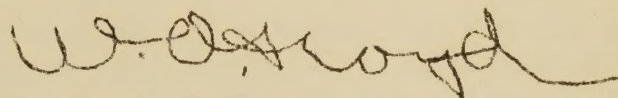
SUMMARY OF

RANGE-LIVESTOCK AND RANGE-MANAGEMENT EXTENSION WORK IN THE

ELEVEN WESTERN STATES - 1932 TO 1936, INCLUSIVE

EXCERPTS FROM ANNUAL REPORTS OF
STATE AND COUNTY EXTENSION WORKERS

This symposium was prepared at the request of the Western States Extension Conference, held at Spokane, Wash., May 24-27, 1937, for use in range-livestock counties in the Western Section. The excerpts have been made by Nell V. Price, Extension Studies and Teaching Section, and are in the language of the reports submitted, without editorial review. The circular is issued in two parts: Part I. - Range-Livestock Management; and Part II. - Range Management. It presents to county agents and specialists a complete review of extension effort during the years 1932 to 1936, inclusive, in this important field in the Western States, and should be of great help in the preparation of both State and county plans of work.



W. A. Lloyd, In Charge
Western Section

This circular has been distributed to: Extension directors and assistant directors; agricultural-college libraries, and experiment-station libraries; and to the following in the Western States, Alaska and Hawaii - State and assistant State leaders, agents and assistant agents in county agricultural work; and specialists in livestock and in agronomy.

SUMMARY OF

RANGE-LIVESTOCK AND RANGE-MANAGEMENT EXTENSION WORK IN THE

ELEVEN WESTERN STATES - 1932 TO 1936, INCLUSIVE

PART I. - RANGE-LIVESTOCK MANAGEMENT

Section 1. - Cattle

ARIZONA

1932

Animal Husbandry Specialist:

Livestock Management: Attention is being given to the use of sires- the proper number of bulls per 100 cows or number of rams per 100 ewes; also to selection and care of purebred sires, culling of females, controlled breeding, use of equipment, dehorning, and supplemental feeding. Work in reduction of losses has consisted in bringing cases of suspected epidemics or general disease problems to the attention of the State veterinarian. In minor cases published information has been effective in disease control and control of parasites. An investigation of losses points to their being due, in the main, to poisonous plants, disease, or lack of nutrition. A number of cases of bloat, both on alfalfa pasture and in feed lots on rations of alfalfa hay and barley, have been reported. The belief is increasing that losses from screw worms are being materially reduced through the use of instruments performing bloodless castration. Livestock management under farm conditions has consisted in selection of feeder cattle, preparation of rations, and grading of fat cattle.

Particular attention has been given to increasing the calf crop. The following are contributing factors: Feed conditions, age and condition of herd, distribution of bulls, selection of cows for breeding, and distribution of water.

More cattlemen are practicing weaning and supplemental feeding at the same time. Cottonseed cake is the chief feed for this purpose, although some are adding alfalfa hay and grain hay. Not only do the calves do better through the winter, but the heifers that are kept for the breeding herd are accustomed to supplemental feed and will go right along should supplemental feeding become necessary later. However, some still feel that supplemental feeding should be postponed to the last moment because of the danger of changing the grazing habits of cattle. Although early feeding has been successful in some sections, there is some question on this point as to Arizona, because it is quite different from other sections in topography, vegetation, and other features. Most of the cattlemen do not, and cannot, produce roughage for more than a few head, and of course, purchase of this feed is out of the question; but feeding of cottonseed cake is profitable, at least under some conditions. The best results seem to be obtained when the daily ration is concentrated into two to four days' supply and fed every second or third (or fourth) day. Better results are apparent also when cottonseed cake is fed as near as possible on the grazing ground, rather than in corrals and at

Arizona-1932 (Continued)

water holes. Also, feeding of the cake seems most beneficial when begun while the cattle are in thrifty condition.

One owner reported that a group of calves fed cake at a cost of 75 cents per head brought over \$2.00 per head more than those from the same herd that were not fed cake. Another case was reported where 150 pounds of whole cottonseed per year for two years, or a total of 300 pounds per head, was fed to steers. When marketed as short two-year-old, they averaged 893 pounds per head at the ranch. The cottonseed had cost not more than one cent per pound laid down at the ranch, and the cattle were at least 150 pounds per head heavier than they would have been otherwise. The extra weight sold at \$4.00 per cwt., or a total of \$6.00.

Dehorning of cattle is fast coming into favor, and steers two years old and over are becoming popular as the use of hay and pasture increases. Older steers are in such demand that common, aged steers from Mexico have been put on the irrigated pastures. Encouraging results have been observed from feeding of dicalcium phosphate as a supplement to salt.

C. U. Pickrell,
Phoenix, P.O. Bx. 785.

Santa Cruz County Agricultural Agent:

Range Cattle: This project covers every phase of the range cattle industry and is conducted in every part of the county. During the year the agent spent 44 days on this project and contacted almost every cattleman in the county.

During the year the agent worked with 43 different cooperators on the following subjects pertaining to range livestock production: Grazing capacity of different ranges; herd improvement through registered sires; herd improvement through selection of heifers and culling cows; weaning and feeding heifers; winter feeding bulls and old cows; dehorning calves with dehorning paint; dehorning cows with saws and clippers; construction of corrals, chutes, and other labor-saving equipment; water development; range salting; seasonal grazing to build up pastures; putting up supplementary feed; and marketing.

In addition to this work, the agent, with the assistance of the extension specialist Mr. Pickrell, held a three-night livestock school and also held a demonstration in the selection of breeding stock. The livestock schools were very well attended and were very interesting. The talks were supplemented by charts and lantern slides. In addition to the demonstration on selecting breeding stock we had a pen of yearlings and showed the points to look for in selecting feeders. In the three night meetings and the demonstration there was a total attendance of 100 cooperators.

Mr. Scott and Mr. McGinnis from the University, with the agent, were called to Arthur Lee's ranch, where he had lost several steers that he had on pasture. This pasture was a piece of bottom land where there is an abundance of Johnson grass. He had irrigated this field and the Johnson grass had made a good growth; however, there were several large areas that showed signs of wilting and when we made field tests for Prussic acid we found considerable evidence of it. We advised him to move his steers off the pasture, which he

Arizona-1932 (Continued)

did, and his trouble ended; so we felt quite certain that the wilted Johnson grass had caused the losses.

Joseph P. Sexton, Jr.
Nogales.

1933

Animal Husbandry Specialist:

Livestock Management: This sub-project, embracing all that pertains to the animals themselves in range livestock production and with flocks of sheep on the farm, has received the greater part of the time during the year.

Production of rams and bulls: In order that the Arizona sheepmen and cattlemen may have a supply of rams and bulls when needed, every effort possible has been and is being made to increase the supply of Arizona-produced bulls and rams wherever possible and profitable.

At one time Arizona was fairly well supplied with home-produced rams, but financial reverses of the industry caused this supply to diminish considerably below the demand. Improved methods in the use and care of rams has reduced the number of rams required annually.

In the production of either rams or bulls three factors are of vital importance: (1) A sufficient supply of extra-good range land, well supplied with water and accessible to prospective purchasers; (2) the land must be in the hands of a man who is not only a successful producer of grade or commercial livestock, but who is so trained he can select animals of a desired type; (3) contact with other breeders through shows and sales.

Use of the bull: Here, as elsewhere, breeders are likely to become so satisfied with their herd bulls, especially if purchased at a high price, that that blood is concentrated in the herd to the extent that defects are transmitted to succeeding generations. An effort is being made to induce the breeder to constantly look over the cattle of other breeders.

Recent studies have shown clearly, too, that some outfits are not yet using a sufficient number of bulls per hundred cows. Some of our best calf-producing ranges are located in sections where as many as five or six, and even seven, bulls per hundred cows are necessary. The best producers consider this point important enough to give it constant attention. It does not require many extra calves, even at present prices, to more than offset the wages of a man who could give his full time to this work during the breeding season.

A part of the program this year is segregation of bulls in reserve pastures during the winter; also supplemental feeding of cottonseed cake when necessary. During December quite a few began giving it to thin cows, and cattlemen are fast learning the advantage of beginning this feeding while animals still have sufficient strength to secure roughages on the range.

Culling Females: This part of the program probably is more important now than it was a few years ago because in many herds the first steps in improvement, which are generally the greatest, have been made. Culling and selection must take place first with the heifer calves, if one is marketing calves. Much courage is needed to keep back the tops, which of course will materially reduce the average weight per head of those sold. A sufficient number of heifer calves should be retained to permit at least a ten percent

Arizona-1933 (Continued)

cut when they are yearlings, and, if circumstances permit, a sufficient number of heifer calves should be retained to permit another ten percent cut when they are two-year-olds. The segregation of the yearling heifers from the breeding herd is yet to be taken up by most of our range cattlemen, but it is a practice that is coming into use.

The use of breeding pastures is another feature that some day will be adopted. One cooperator, who has not been able to establish a breeding pasture, a year ago held his cows under what might be termed open herd with the bulls during the breeding season, and is much encouraged by the increased calf crop secured this year.

Dehorning: This practice has not yet received its just reward in price at selling time. However, in most cases, the dehorned cattle sell first. If all the producers in one district would dehorn, no doubt a premium would be paid for the cattle. Many urge that the difference received for dehorned calves or yearlings is not sufficient to warrant the extra expense involved during range work. There are, however, many other advantages besides the premium in price received. Dehorned cattle when trucked, especially old cows, ride much more comfortably and arrive at destination in much better condition and with less shrink.

Miscellaneous: Chutes are being used for branding and dehorning the larger calves, for doctoring, removing ticks, cutting, and loading. Scales are being established at shipping points, thus offsetting the growing practice of weighing at destination, due to the absence of scales at truck-loading points. Dipping vats have been prominent in the program because of an outbreak of scabies in two counties. One cooperator, who for a number of years has dipped his entire herd for lice and other parasites, says it is the most profitable investment on his ranch. His cattle are always in good condition.

Chas. U. Pickrell
Phoenix, P.O. Box 785

Santa Cruz County Agent:

Range Cattle: The agent this spring worked with practically every cattleman in the county, assisting a great many of them on their range and helping the rest of them by furnishing information on dehorning cows and calves, feed rations for fattening cattle, supplementary feeding, water development, and various systems of management.

In many seasons here there is a very luxuriant growth of grass over the ranges in the county; but for various reasons this grass does not mature and cure out with any strength to it and it is quite necessary to feed cattle here to keep them from dying early in the spring. Feed production was discussed with various cooperators and last fall and this spring both Mr. Larimore and Mr. Heady fed a number of head on the hay they produced last year. Both of them report that it was quite profitable, as the cows were in very good shape this spring when they calved and they were able to care for their calves to a much better advantage than cows that were not fed.

This year there are six or seven stock cooperators who are planning on growing some crops for early spring feeding.

Another suggestion that is being adopted by a number of the stockmen is keeping the heifers separated from the bulls until they are two years old. This gives them a chance to mature, and they make much better cows and produce better calves; it eliminates much of the danger of losing the cow at her first calving.

Arizona-1933 (Continued)

Mr. Larimore has 64 head of heifers that were a year old this spring, which he has in a separate pasture. It is safe to say that they are fully 100 pounds heavier than those of the same size running on the open range.

The agent has assisted about eight cooperators in dehorning their calves but to date only Mr. Larimore has dehorned his cows. He estimates that it has increased the value of his herd by many hundreds of dollars, as there is less danger of worms from horn hooks, more cattle will utilize the same area, and more cattle will drink from a trough or lick salt at the same time. In the spring, when it is necessary to feed a little cottonseed cake, all of them will come in for their share as they are not afraid of getting a dig with a horn.

One of the biggest problems of the stockman in the mountain ranges is keeping up his calf crop. Many parts of the range are too rough for big bulls to navigate, and in this type of country the calf crop is often as low as 30 percent. A suggestion that has been offered, which I believe will be adopted by a few this next year, is pasture breeding. Most of the cattlemen have a pasture where they could hold their cattle for sufficient time in the spring to insure a high percent calf crop and then they could be turned back on the range.

Joseph P. Sexton, Jr.
Nogales

1934

Yavapai County Agent:

Beef Cattle: The types of work stressed have been:- (1) organization for improved marketing; (2) rodent and predatory animal control; (3) improved bulls; (4) range fencing; (5) chute construction; and (6) general economic information. Results appear to have been larger and more permanent in this industry than in the other fields.

Marketing efforts have gone through an evolution that has finally resulted in a policy of two parts: (1) to encourage buyers to come in and thus increase competition amongst buyers; (2) to line up with a national program that has a chance of becoming really effective, through the adjustment of supply to demand.

E. S. Turville
Prescott

1936

Animal Husbandry Specialist:

The first phase of the program has been that entitled "Livestock Improvement" and has included, as far as possible, all phases of the work which apply actually to the livestock. In this group is all the work connected with improvement through better blood, such as selection of breeding stock; production of bulls in Arizona; management of bulls; culling of females; controlled breeding; dehorning; construction and use of equipment, such as squeeze chutes, cutting chutes, corrals, scales and dipping vats; weaning; care and handling, which include the subphases of elimination of range branding, better care in

rounding up, and delivery of stock to markets; supplemental feeding, which has included the use of protein supplements to range grasses and brouse, as well as with the use of native-grown hay; feeding of salt and other mineral mixtures.

Purebred Sires: The production of purebred Hereford bulls in Arizona has shown a slight increase each year for the past five years.

Centers for the work in connection with the production of bulls are the county shows and fairs of the State, which are all more or less tied in with the Tuscon Livestock Show. There are individual classes and auction sales of great educational and financial benefit to the purebred breeders, pens of bulls of particular interest to the rangeman, and feeder cattle which are an excellent comparison in type for the benefit of cattle feeders, rangemen, and purebred breeders.

The sub-phase of the program that accompanies the selection of sires is that of care and management. During the year the writer has proposed the following plan for several units, where there is sufficient fencing. Select a few outstanding cows and bulls to be maintained in a separate pasture during the breeding season. Use the top heifer calves from this mating for replacing cows that are taken out of the herd each year. Such a system will be sufficiently profitable to warrant the purchase of a few outstanding bulls.

Distribution of bulls on the range:- is a higher phase of the program and one which is adopted more slowly but is gradually coming into practice. Segregation of bulls during winter, accompanied by supplemental feeding of bulls, has received encouraging response during the year. The idea here has been not to maintain bulls in a condition so as to be inactive but in a very good, vigorous condition when spring arrives. Segregation of heifers from the breeding herd still continues to be a part of the program.

The droughts of 1934 and of the present year have brought home more clearly than ever before the importance of weaning large calves; in fact, many cows will be saved during the present winter as the result of having had late calves sold as veal.

Segregation of range units has done much to eliminate range branding and as a result much has been accomplished in the production of gentle cattle. A few years ago mention of the use of traps indicated extremely wild cattle. Today use of traps with gentle cattle is proving very satisfactory in the brushy and more mountainous sections. There is a great saving of labor and it is much easier on the cattle, especially when small pastures are provided in connection with traps. Traps of course are most effective when plenty of salt is provided.

C. U. Pickrell
Phoenix, PO Box 785

IDAHO

1932

Animal Husbandry Specialists:

Livestock Situation: Based upon the agricultural and grazing background, the Extension livestock program has been to establish and conduct a balanced livestock industry along the line of maintenance of the range livestock industry.

Idaho-1932 (Continued)

The amount of grazing land available makes the ranging of livestock a profitable industry. For a time the State went through the transition period of having sufficient spring and summer grazing to care for all the livestock that the winter feed on a limited number of ranches could maintain. With the development of the large irrigation projects, winter feed was produced in excess. For a number of years the free ranges were badly over-stocked, and far more applications for grazing permits in the forest were received than could be granted. The final readjustment has taken place, which has established two livestock industries, a farm and a range.

The properly stocked ranges of the State have a safe carrying capacity for 500,000 cattle and 2,000,000 sheep. In the allotment of grazing territory to either cattle or sheep the following points must be considered:

1. Cattle ranches are located mostly in the higher altitudes where the winters are long and hard for sheep.
2. The rough feed utilized by cattle is unsatisfactory for sheep.
3. Some of the grazing areas are better suited to cattle than to sheep.
4. Because of winter conditions the home ranches of the sheep are in the lower irrigated sections where the farm land is higher in price and winter feed more expensive than in the mountain valleys where the cattle ranches are located.
5. Over a period of years the comparative returns from the two industries are so nearly equal that the proper balance seems to have been reached:
 - a. In the cattle areas sheep do not return as much on the investment as do cattle.
 - b. In the sheep sections the reverse is true, sheep making a higher return than the cattle.
6. Where both range to advantage, the combined cattle and sheep outfit is now established under one management.

The balance between range cattle and sheep tends to remain fairly even. During the last decade considerable publicity and work has been necessary to maintain a balance.

The Range Cattle Industry: This is the oldest, one of the largest and most widespread, yet the most obscure and least known of the agricultural industries of the State. The coming of the settler to Idaho increased the number of range cattle by establishing farms where winter feed could be produced. The industry developed gradually, with some of the ranches keeping and increasing the cattle, with the maximum number in the State during the period from 1920 to 1925.

An industry such as that of range cattle, that was started and developed with practically no assistance from the United States Department of Agriculture, the Experiment Stations, and the Agricultural Colleges, presents problems that are somewhat puzzling from an Extension standpoint, requiring a different method of approach. Information gained in experimental feed lots and with purebred cattle herds could be applied in only a small way to the successful management of a range cattle outfit. For this reason, much of the work of the range cattle industry has been in the form of demonstrations to determine profitable methods of management, production and marketing.

Management of Idaho Range Cattle: As a general rule, the cattle ranches are in the higher mountain valleys, where they are strung out in shoe-string form along both sides of the stream. Irrigation is from the natural flow of the river. Hay is the main crop, though some ranches produce grain as well.

Idaho-1932 (Continued)

The land is cheap and the only expense for the irrigation water is the labor. The high altitude is of but very little disadvantage. If the grain is frosted it can still be fed to the cattle. The cattle winter in the underbrush and the willows along the streams, where they are fed hay. Deep snow is no handicap.

In the spring the gates are opened and the cattle turned onto the sagebrush range of the foothills back of the ranch. They can come and go through the ranch to water, yet this privilege is denied to transient cattle and sheep. Thus, good early range can be conserved. The only riding necessary is to prevent the cattle from starting to their summer ranges too early. As the season advances the feed of the lower hills becomes dry, but the snow has melted so the cattle are moved a little higher where feed conditions are exactly as they were on the lower range adjoining the ranch a few weeks previous. The trip to the summer range is made in this way. Much use is made of salt distribution in moving the cattle.

Once in the forest, the riders prepare their permanent camp. While not difficult, there is steady work ahead of them. Some of the good range is so accessible that equally good range, more difficult of access, may be neglected. The cattle must graze all alike.

Older steers and heifers will graze farther out than the bulls and cows and calves, and these must be depended upon to utilize the more remote, steep, and difficult part of the ranges. Should the outfit have sold all steers and heifers the previous year to get through a hard winter, so that the herder has only cows and calves and bulls, he will need to have fewer cattle on his allotment than if he has a complete herd. If Idaho comes to the stage of producing and selling all steers as calves, the carrying capacity of the ranges will be decreased. By proper herding and shrewd distribution of the salt all ranges will be used at the proper time.

As the snow melts on the higher sections of the allotment, the cattle will tend to drift upward while the feed is yet too immature and the ground too soft to make grazing advisable. By keeping the salt on the ridges in the lower altitudes, and daily riding to turn back the more forward cattle, the higher feed will be permitted to make sufficient growth so that the cattle may have good feed the latter part of the grazing season.

When the bulls come out, usually about the middle of June, they need to be evenly distributed. Keeping an even balance between the numbers of cows and bulls on a range is one of the perplexing problems for the riders to solve. While spaced out evenly over the range when they first come out, if not watched they will tend to drift and congregate.

Bulls, cows and calves on the range are unsatisfactory. The bulls will not climb with the younger stock and dislike to use the steep hillsides. If the bull is heavy, fat and soft, he may become footsore and "go to pieces". A big, heavy, fitted bull is fine in a sale or show ring, but is a pathetic figure on the range.

Cows feel that they must keep their baby calves well concealed and yet require so much more water than dry stock that a long trip from water is not necessary to see all the cows and bulls on the range. The steers and heifers may be far up in the mountains and hard to find.

Usually one rider to each thousand cattle is sufficient to keep the cattle thriving and the range properly grazed.

Idaho-1932 (Continued)

The big round-ups, with scores of riders, are seldom held. The cattle have their well defined grazing grounds and allotments. Use is made of fenced holding pastures. The regular riders on their daily trips can cut out the "beef" and bring them to the holding pastures. In from two to three weeks all will be in and can be shipped. Late in the fall the breeding stock can be assembled and brought home in the same way. If autumn snows are late and the high feed still good, it will not be possible to get all the cattle until forced in by the snow.

The cattle ranges are fully stocked and the industry should not expand. Packer buyers and feeders will buy all the cows and steers and calves for sale. Advertising the range cattle industry is not necessary.

During the last five years better results have been secured with range cattle extension work than ever before. This was due to three reasons:

1. The Extension Animal Husbandman was more familiar with the problem and could offer a more popular form of project.

2. The cattlemen were more familiar with extension work.

3. For six years preceding 1928, sheep returned more on the investment than cattle. Many theoretical opinions were expressed that the day of the range cattle was past and that range cattle could no longer compete with farm raised beef cattle, as well as the steers and surplus cows and calves from the dairy industry. A question of doubt was in the minds of cattlemen who thought that perhaps they would have to change to sheep. It was partly to solve this problem that the projects on the cost of production and marketing of range cattle and sheep were undertaken.

Complete cooperative and survey data have covered a four-year period with 131 cattle outfits, including such items as general layout of the ranch, equipment, investment, expenses, sales, breeding, costs and profit. (A detailed report is given in the Annual Report for 1932).

Purebred Cattle Industry: The breeding of purebred cattle was undertaken as a specialized industry on many of the irrigated ranches. This industry developed mostly in 1910 to 1921. Today a majority of the purebred herds are dispersed. The purebred cattle mostly shifted to the range cattle areas, where they are kept on ranches. In some cases they are the only cattle on the ranch, but in a majority are owned by range cattle outfits who raise their own bulls. They are not ranged, but are held in pastures on the home ranch. They are not crowded, nor are they given as good care as is characteristic of the purebred cattle industry as a whole.

The purebred herds are not fitted for show. Herd sires are purchased outside the State. Undesirable cows and bull calves, off-colored and of poor type, are turned out as grade cattle with the range herds. The cattle are not as large or as heavy as competing cattle raised in the irrigated sections or in the Corn Belt, but are very popular in the range areas. The range bulls usually weigh from 1,300 to 1,500 pounds. They are strong and active, good grazers, and give good service on the range. Most range outfits have a prejudice against farm bulls, especially those that have been heavily fed and are fat and heavy. Large, heavy, fat bulls are poor grazers, "go to pieces" on the range, and render but little service. The mature bull that has been fitted and shown and not turned into the range until four or five years old does not graze far enough from the water to secure good feed and is usually a disappointment.

Idaho-1932 (Continued)

Extension work with the purebred beef cattle is now along two lines:

1. Assisting with the purchase of herd sires.
2. Assisting with the selection and distribution of the purebred bulls from ranch to range.

E. F. Rinehart
State College of Agriculture
Boise

1933

Animal Husbandry Specialist:

Range Cattle Management: Range cattle, as a whole, are managed by a combination of ranch and range. It is a system that has split up a few large outfits into a large number of small outfits. The average size of the outfit with which extensive Extension work has been done for the past five years is 405 head of cattle to the ranch. The numbers owned by the different ranches may range as low as 25 head.

On the range one man can usually take care of 1,000 cattle. Should the ranch own this many, they will employ their own rider. If possible to secure a range allotment for this many head, it will be an ideal situation, though not always possible. As the average ranch will not winter this many cattle, the outfits are usually much smaller. To handle the cattle properly on the range the cattlemen will organize a grazing association which employs sufficient riders to care for cattle on summer ranges. It is the duty of the officers of the association to arrange for the collection of the assessments for the summer expense, such as riding, the purchase of salt, and the leasing of grazing lands. The dates of assembling the cattle to take to the summer range and the time for the beef round-up are set by the association officers. On assembling day each member delivers his cattle to a designated meeting place, where they are counted in. When the beef round-up is held each owner is given the choice of having the fat cattle bearing his brand sorted into the beef herd or permitting them to remain on the range for later sale. When the fat cattle are assembled in late summer, each owner is asked to come to the range where the fat cattle are held in holding pastures and decide upon the disposal of the fat animals bearing his brand. They may vote to sell to buyers who are present or may vote to ship. The market cattle may be split, part being sold to the highest bidder on the range and part being shipped to market. When the final sale is made, the cattle will be sorted according to brands and each group sold, weighed, and calculated separately.

Cattle Conditions at Close of 1933. The year ends with a number of market cattle not yet sold. These include dry fat cows, as well as yearlings and two-year-old steers. The demand for calves is strong, but generally they are not for sale this year. There are some two-year-old steers yet out that are not sold which will be held for fattening on grass. The supply of yearling steers is practically the same as was held last winter. Feed is not as abundant as a year ago, and is higher in price. With a short, open winter, the cattle will come through in good flesh, but with a long, hard, cold winter most of the cattle will be thin when the grass comes next spring.

Purebred Range Bulls: The Idaho law requires that one registered bull of a recognized beef breed be turned out with each 25 females of breeding age.

Idaho-1933 (Continued)

Dairy and dual purpose bulls are not permitted to run at large. The only exception is that some milking Shorthorn bulls are occasionally turned loose close to interior ranches where the cattle are mostly milking Shorthorns, and some of the cows are milked.

At the present time Idaho is not producing all the purebred bulls needed on the range. Purchases are made, usually in carload lots from outside the State. The range industry requires from 8,000 to 9,000 bulls. In years when the heifers are held back, the number required on the range is 8,937. In years when the heifers held back are for the replacement of old cows only, the number is 8,156. As the bulls are run through four breeding seasons, the number required annually to replace bulls lost and old bulls shipped to market is 2,250. To supply this number there are in the State 5,767 registered cows of the beef breeds. Many of the purebred cows are not used for the purpose of raising purebred bulls. The price received for range bulls has been so low that large numbers of purebred steers are raised. This is especially true in the smaller herds, where the cows are not of the size and type necessary to produce bulls that will meet the standards of the range man. The result is that there is a shortage of good serviceable bulls each year. This shortage is further accentuated by the fact that the demand is not for the same number of bulls each year. In years such as the past two, where cattle returns have been low, the cattle industry will get along with fewer young bulls, keeping over-old bulls that ordinarily would be sent to market. Following a prosperous year the demand for bulls will be far in excess of the supply.

The purebred industry is conducted in two ways. The larger purebred herds are well known and well kept up. These ranches have bulls for sale in carload lots. Many of the purebred cows are owned by range cattle outfits. As a rule the cows are not turned out with the range cattle, but are held on pastures of the home ranch, though sometimes the purebred cows are run with the range cows. The majority of these ranches produce only enough bulls for their own use, keeping only the choicest, marketing the others as range steers.

Aberdeen Angus and Galloway bulls are permitted on the range. There are no Galloways now in use. A few range outfits have grade Angus cows and a few registered Aberdeen Angus bulls are used. This number is small, only 1.36 percent of all the range bulls being of this breeding.

E. F. Rinehart
State College of Agriculture
Boise

Caribou County Agricultural Agent:

Range Cattle: The higher elevations of Caribou County are quite rolling and carry a good covering of grass. The mountains are separated by broad valleys and the streams are fringed with willows which form a haven of refuge for cattle during fly time. In the dry valleys the Forest Service has developed water systems, which catch and hold all water and prevent seepage, and enable a comparatively small spring to water a sizeable bunch of cattle all summer. The owners of the cattle are organized and have formed grazing associations for mutual protection. Each association has its own rider, who looks after the cattle, salts them, and keeps them from straying off their own range. The presence of the range rider to a large extent keeps down the rustling of cattle.

Ranges were dry this past summer due to the limited amount of rainfall

Idaho-1933 (Continued)

received in this area. Only 2.13 inches of precipitation were recorded between the first of June and the first of October; as a result, cattle came off the range which were not as fat as in former years.

Range Bulls: Walter Hogan, Ernest Smith, L. B. Taylor, Assistant Animal Husbandman, and the county agent formed a sifting committee for passing on the merits of bulls to be allowed on the Dry Valley Grazing Association range this past season. Of the 77 bulls inspected 15 were turned down. Only purebred bulls are allowed on this range. The directions given to the sifting committee were "to select only bulls with a superior front end and well balanced throughout".

Fred A. Finch
Soda Springs

1934

Animal Husbandry Specialist:

Range Cattle: In the Idaho cow country there are two classes of men utilizing the range:

1. The dry farmer, who started as a nester, or homesteader, drawn by the lure of free land. The settlers had little knowledge of agriculture. Living in these areas always has been precarious. The livestock is unimproved. The cattle consist of mixed and nondescript breeds. During the last few years many of the better grade cows and heifers have been sold and the lower grades that had but little or no market value retained. Bulls in use may be grade Shorthorns, Holsteins, Jerseys or Guernseys, kept from one of the cows in the neighborhood, or bull service may be secured by turning the cows and heifers out on the range to mingle with the cattle of the larger cow outfits and be bred by the purebred beef bulls of the cattlemen. The cattle kept are mostly of but little use for either dairy or beef purposes, but considering the scanty feed, poor rations and poor care possible to give, are perhaps better adapted than high-producing dairy cows. The market cattle from these areas consist of various combinations of the common breeds of cattle. Steers are usually produced and sold as low-grade cattle.

2. In the more favored areas, mostly in the higher valleys and along the streams, are older ranches that were settled before the dry farming regions were. As these are in the valleys with irrigation possible through the natural flow of the streams, these ranches are more productive and more prosperous.

The Idaho cattle industry is mostly conducted in these higher valleys, where there are almost 3,000 ranches. The number of cattle kept may range from 25 to 500. In order to produce ample income for a good living, there should be at least 100 breeding cows. Those who have a smaller number must live on a low plane, or else make cattle raising only a part of the ranch operation. During the last 20 years there has been a tendency of the larger cow outfits to split up into smaller outfits, which is making the industry much less lucrative. This has come about by the dividing of the cattle ranches at the retirement or death of the original owner. In the recent depression and the drought of 1934, the small cow ranch and the dry farming areas have suffered the greatest privation.

The season of 1934 found Idaho ranges fully stocked for the carrying capacity of a good year. Cattle had been increasing in numbers since 1930, due to the increase in the number of cattle by the men already in the business.

Idaho-1934 (Continued)

However, existing and continuing beef cattle projects were discontinued for the year because unusual conditions made the common practices impossible, resulting in the shifting of much livestock to market and to feeding grounds, thus creating an unnatural situation. Assignment to the drought relief service required full time with the purchase and movement of the cattle from the drought stricken areas; hence the regular project work could not be conducted. By mutual agreement it was discontinued for the year, most of it being postponed until 1935.

Purebred Beef Cattle: In Idaho there are 239 breeders of purebred cattle. The average size herd consists of 24 head of breeding cows. Of the beef breeds kept the Hereford herds average the largest, averaging 62 breeding cows to the herd. However, there are far greater numbers of Shorthorn than of Hereford breeders.

Range cattle of the State are of both Shorthorn and Hereford breeding. As a general rule, the larger outfits consist mostly of Herefords. This is especially true in the semi-desert type of range predominating through part of southern Idaho. The smaller outfits are inclined to favor the Shorthorns. Part of the cows are milked, while part are run on the range with the steers and young stock. In the more remote farming areas, where there is not a great abundance of irrigated pastures and nutritious winter feed, the Shorthorn is the popular cow on the farm.

On the heavy timbered and brushy ranges the Shorthorn is generally preferred to either the Hereford or Angus because of a belief that the latter breeds tend to become wild under these conditions.

Some outfits change breeds of bulls periodically, using Shorthorn bulls on Hereford cows to improve the milking qualities of the cow herd and Hereford bulls on the Shorthorn cows in an effort to produce range cattle that are good rustlers and early to mature. The result is that some years the majority of the steers in some sections are brockle faces.

Drought conditions and reduction of cattle numbers worked a hardship on purebred cattle and purebred breeders. Bulls are the poorest rustlers of all range cattle and many become so foot-sore and emaciated that they had to be taken from the range during the breeding season. In the dry areas the bulls were very inactive during the summer. Losses of range bulls were heavy.

Because of the uncertainty of the grazing season, and the shortage of feed confronting the cattle, the purebred bull market was very inactive during the spring and summer. During the summer good purebred bulls that were offered to the Drought Relief Service were refused and were sold to farmers, speculators and dealers at from \$25 to \$40 per head. Later in the season these were re-sold to the cattle outfits at from \$60 to \$100 per head. At the close of the year there was a strong demand for good range bulls, most of which were held at prices well above \$100.

Definite project work with the purebreds was not completed. Extension work with purebreds consisted mostly in locating buyers for the sale bulls from the purebred breeders in the drought areas, and assisting in locating, selecting and distributing bulls to the range trade.

E. F. Rinehart
State College of Agriculture
Boise

Idaho-1934 (Continued)

Oneida County Agricultural Agent:

Range Cattle: Oneida County cattlemen own approximately 10,000 head of cattle. These cattle range on the Cache National Forest east of Malad, the public domain west of Malad, in Curlew Valley, and on the Black Pine mountain range in the extreme western part of the county. Producers are organized into grazing associations for each particular area. There are three organized grazing associations: The Malad Forest Users Association, with Chas. N. Fredrickson, President, and Kahlil Kingsbury, Secretary; the Pleasant View Grazing Association, with C. E. Thomas, President, and M. T. Jones, Secretary; the Samaria Grazing Association, with David Hughes, President, and Lewis Hughes, Secretary.

The agent discussed wintering range cattle on straw and materials available at four meetings with 123 in attendance. Producers were encouraged to stack all available straw and coarse roughage available, to cull their poor livestock, and market their beef animals while they were still in marketable flesh.

D. E. Warren
Malad

1935

Animal Husbandry Specialist:

Range Cattle Conditions at Close of 1935: Cattle conditions were greatly improved during 1935. Heavy marketing through regular channels and the drought relief program had resulted in close culling of old cows and inferior heifers and steers. The demand for cattle of all classes was fairly strong, with the result that marketing was heavy throughout the year.

Feeder Cattle: Buyers were numerous throughout the early part of the season, and cattle were hard to buy. Unlike the preceding years, it was not necessary to hunt buyers. Sellers hesitated to price their cattle, fearing that the asking price would be too low. Visiting buyers were welcome, but there was an indifference on the part of the cattlemen. If a sale was not made on that date, there would be more buyers come along the next day.

Among the buyers were a number of representatives and order buyers from the Corn Belt and from California who were looking for quality cattle. These men knew what they wanted and when they found it were not inclined to dicker over the price. These outside buyers readily paid 7 cents for steers that suited them. The regular Idaho buyers were somewhat puzzled at this method of operation. Some met the competition, and paid the price. On some of the better lots of cattle the price was raised above 7 cents. So far as known, the highest prices paid for feeder cattle were \$7.50 for good three-year-old steers weighing 1284, \$7.15 for good two-year-old steers weighing 913, \$7.15 for good yearling steers weighing 690, and \$8.00 for good steer calves on which the weight was not learned but which would weigh slightly in excess of 400 pounds. The highest price known to have been paid for cows was \$5.15 and for good yearling heifers \$6.50, though one sale of good mixed yearling steers and heifers was made at \$7.00. Other sales in which the cattle were not weighed but were dollared off by the head looked higher.

After buying had progressed for six weeks, with the above prices prevailing, the demand suddenly slowed down. Almost over night orders were cancelled

Idaho-1935 (Continued)

and the out-of-state buyers disappeared. Prices slumped slightly, but not as much as anticipated. Most of the remaining cattle were in strong hands, and the owners were inclined to hold them for as much money as had previously been paid for cattle of like quality. Rather than accept the offers, which were from 50 cents to \$1.00 lower, the cattle were put into the feed lot, either on the home ranch, or on contract at the large commercial feed yards, or with experienced feeders. Others loaded their cattle for market, in which case the prices received were generally disappointing.

Low-grade feeder cattle were in strong demand. Prices paid ranged from \$4.50 to \$5.00 for common and medium cattle. In most cases dairy blood greatly predominated, the majority of the low-priced cattle being of the grade sold to the drought relief service the previous year.

E. F. Rinehart
State College of Agriculture
Boise

Franklin County Agricultural Agent:

Livestock Industry: Beef: The beef cattle industry in Franklin County is assuming greater importance because of the increase in the number that go into the feed lot each year. Generally speaking, farmers are not able to produce their supply due to lack of summer range and pasture lands; consequently the majority of the animals that go on feed are brought in from adjoining territory. The feeding program is made possible, largely, because of the availability of by-products from the sugar factory, namely: pulp and syrup.

Lambs: Lamb feeding, or pasturing, is also developing to a considerable extent. The general practice is to bring in feeder lambs and finish them on beet tops, uncut third and fourth crop alfalfa, grain stubble and other types of pasture. Many of these lambs go into the market in a highly finished condition without having consumed feed other than the by-products of beet fields and other pasture.

Chase Kearl
Preston

Oneida County Agricultural Agent

Beef Husbandry: Oneida County cattlemen own approximately 15,000 head of range cattle. The cattle range in the Cache National Forest, the public domain west of Malad, the Curlew Valley and Black Pine Mountain range on the extreme western boundary of the county. All cattle are fed in the winter except those around Black Pine and Stone. These cattle are allowed to winter out around the Great Salt Lake.

Producers maintain three grazing associations; the Forest Users, the Pleasantview Grazing Association, and the Samaria Grazing Association.

The public domain used by the cattlemen was recently included in Idaho District II of the Taylor Grazing district.

D. E. Warren
Malad

MONTANA

1933

Prairie County Agricultural Agent:

Cattle Improvement: Many herds in this county in the past three years have shown decided improvement. There are still many farms and ranches that are using very inferior bulls and many of the stockmen feel that with prices so low they cannot afford to buy good type bulls. The feeder marketing work has done some real good along this line, especially when feeder buyers refuse to buy calves or yearlings unless they come up to certain standards.

In February, 1933, a meeting was held with stockmen of the county and the matter of herd improvement discussed. The five-county bull sale was discussed and finally a plan developed where men who wished to purchase bulls were to be visited and their cow herds classified. After classification the grower was advised what type of bull he should buy -- whether the sire was to be low blocky five, or rough, or other characteristics necessary to improve the herd.

Sixteen ranches were visited and herds classified. All sixteen growers attended either the sale at Glendive in March or the sale at Miles City in April and were assisted in selecting the bull they finally purchased; 21 new sires came into the county this spring at a total outlay of \$2,481, and nine were transferred from ranch to ranch.

In May two herds were completely culled by taking out all inferior heifers and then spaying them. The publicity in connection with the entire program was carried to every ranch in the county by letter and news stories.

G. E. Lewis

Terry

1936

Animal Husbandry Specialist:

Cattle Situation: Montana cattlemen, especially in the eastern two-thirds of the State, have been compelled by drought to cull their herds very closely. The majority of the good range herds were culled in 1934, to the best producing cows, from two to five years old. The severe drought of 1934 was followed by a fair grass season in 1935. There was some restocking started in 1935 but no general movement to fully rehabilitate the ranges. This was a fortunate move for the stockmen. The 1936 season started off with the stockmen highly optimistic. Plans were made to ship cattle into the southeastern part of the State in large numbers. Before this movement actually got started the possibilities of another drought was evident. Some of the better stockmen who had saved good foundation herds from the 1934 drought, commenced to cull again in June 1935. These high-grade herds, already of very good quality, were culled down to a very small percentage of the former numbers and again only the best was kept back for breeding purposes. These small herds should form the nucleus of future herds.

The regular extension plan of culling and improving stock on hand will have to be changed to a purchasing program for 1937.

I. M. C. Anderson

Montana State College
Bozeman

NEW MEXICO

1934

Chaves County Agricultural Agent:

Range Stock Management: The work done in cooperation with the Triple A program, as applied to cattle, is being listed under this head, as the work done seems to more properly belong here. As a proper setting for the work related, it seems proper to state that the City of Roswell is the residence of a large number of ranchmen owning land in several different counties. Chaves County alone contains over 6,000 square miles, the most of which is range country. The present figures indicate that this range was occupied by some 150,000 cattle and 200,000 sheep. We might also state that from Roswell it is possible to drive 85 miles in a straight line and still be within the county. So the task of covering this territory under the adjustment program was attended by a few difficult conditions at the time the work was begun.

The range was seriously dry but there was still hope that the rains of July and August would mend matters so that stock still might be carried through the winter. This feeling led to only limited sales late in June and early in July; but as the drought continued and stock water became scarce the demand became painfully urgent.

During this work, extending from late in June until the 10th of November, some 50,000 head of cattle were purchased, the necessary papers prepared, inevitable mistakes corrected, ranchmen pacified, and the general details completed. As a little indication of the work necessary, will say that \$150 was spent for 22-caliber cartridges with which to kill the condemned stock and over \$60 was spent for paint to mark the stock purchased for use. The checks received up to the present writing for this stock totaled \$758,660.

As a range management program this work has been of great value to the stockmen, as they have reduced numbers to more nearly the carrying capacity of the range. They have eliminated a great many of the inferior stock and we hope they learned that over-stocking can bring but one result. From the standpoint of the Extension Service, especially the local office, it has developed a closer acquaintance with the ranchmen of the county and has assured the county agent of good cooperation.

J. R. Thomas
Roswell

1935

Chaves County Agricultural Agent:

Beef Cattle Situation: The beef cattle situation is immeasurably improved over last year. At that time, a drought condition existed over the entire county. There was little grass, and feed was scarce and high in price. Heavy losses were being experienced and the stockmen faced a ruinous situation, when the Government drought relief buying program began. Some idea of the feed situation may be gained when it is considered a total of 94,633 head of stock sold for a total of \$839,949.

This year, with the reduction of numbers, and with the strongest of the stock left on the ranges, stock came through the winter and spring with little

New Mexico-1935 (Continued)

more than normal losses. Rains, while spotted and not too plentiful, improved the feed situation late in the spring, as well as through the summer. While some parts of the county report scant range feed, other parts have as good feed as at any time in recent years. On the whole, there is sufficient feed to carry through until the next rainy season. The chief effect of the drought is evident in the small calf and lamb crops, ranging from 25% to 30% of normal in the case of calves, to from 50% and 60% for lambs. These reduced numbers, however, have undoubtedly been responsible for some of the increase in prices locally, and while it is a matter of regret to the stockman that he does not have a normal crop to sell at present prices, he will in many cases receive almost as much for what he has to sell this year as for a normal crop at the low point of the price cycle.

J. R. Thomas
Roswell

1936

Grant County Agricultural Agent:

Livestock Improvement: Agriculturally Grant County is primarily a straight livestock county. Silver City is the trade territory of ranchers who control approximately 200,000 head of livestock. Its annual fall shipments of calves and yearlings will average about 33,000 head. The organizations that represent or have represented this industry are the Tri-county Livestock Association and the Grant County Livestock Association.

A number of years ago the county agent worked out a definite line of action and set certain definite goals. At that time there were many cattlemen here who were absolutely satisfied with the carrying capacity of the ranches and the quality of cattle carried on them. In order to build up dissatisfaction with their lot, the American National Bank of Silver City was asked to put up \$500 for a tour through the Big Bend country of Texas which was then and still is headquarters for the Highland Hereford Breeders' Association, one of the outstanding Hereford organizations in the United States. Twenty-eight ranchmen made this tour. The trip covered about 1,800 miles, and the results were immediate.

In the eight years that have passed the improvement of range cattle in this county has been revolutionary, until at the present time Grant County calves and yearlings are now being marketed at almost the identical price as the cattle from the Big Bend country.

We are rapidly approaching the point now where in the next few years, 90 percent of our cattle from large and from small ranches and from different sections will all look alike and weigh alike.

Other angles that are now commanding considerable attention are a high percentage of calf crop, low death rates, the culling of all heifers before they are a year old to prevent their further marking of a herd, and the fall purchase of bulls by the cowman himself rather than the spring purchasing of bulls from bull sellers who have brought in the tailends of every registered herd in Kansas and Texas.

Last year Grant County calves brought approximately one-half cent per pound more than they averaged throughout the State. I believe our calves as

New Mexico-1936 (Continued)

a whole this year brought equally as good prices and probably weighed on an average of from 15 to 20 pounds more than any fall shipment of calves from this county yet.

Stuart Stirling
Silver City

OREGON

1933

Curry County Agricultural Agent:

Beef Cattle: A number of factors are crowding the beef cattle industry out of Curry County. Brush is taking the range areas and dairying and sheep are crowding them off the better land. Prices are so extremely low that the owners have merely let them forage as best they can the year round.

R. M. Knox
Gold Beach

Animal Husbandry Specialist:

Buying Drought Cattle: During the summer months the drought in Montana and other sections of the Middlewest made available a large number of cattle that could not be fed in those localities. Montana especially had some excellent cattle of good breeding that they were compelled to sell because of lack of feed and water. Calls began to arrive at the extension office for information relative to the possibility of buying these cattle under a government program. The Oregon Extension service recommended that those who were interested in buying cattle should personally go to Montana and make their own selection. This was done in almost every case. Ten thousand of these drought cattle were brought into the State during the year.

H. A. Lindgren
Oregon State Agricultural College
Corvallis

UTAH

1935

Grand County Agricultural Agent:

Range Cattle: During the year there were 75 ranches and summer cattle camps visited. Suggestions have been given to cattlemen on sire improvement, grading and summer and winter ranges. The USDA and Utah State Department of Agriculture and the county government cooperated in a county-wide tuberculosis test of the range cattle. There are in the county approximately 18,000 head of range cattle; 2,590 cattle were tested for tuberculosis. This covered slightly over 14 percent of all breeding cows and purebred bulls, which is above the State requirement. No reactors to the T.B. test were found among the range cattle. Cattle are ranged in the high mountain countries during the summer months. The spring and fall range constitutes the benches at the foot of the

Utah-1935 (Continued)

mountains, while the open desert furnishes primarily the winter range for the county's cattle. The ranges are in general in a fair condition. The extremes are found, but moisture is needed to produce adequate feed to carry cattle throughout the coming winter months.

J. F. Parrish
Moab

1936

Director:

Beef Cattle: Utah maintains from 400,000 to 450,000 beef cattle in addition to approximately 100,000 dairy cattle. One of the major industries in certain of the high counties is the production of beef. Most of the cattle are given supplemental feed only during the winter. A few selected spots in the extreme south and southeast part of the State permit of winter grazing. Usually the winter grazing is associated with costly hazards. Better beef cattle are being promoted through the purchase of high-grade breeding animals, uniformity and seasonal calf production and better care on the range. Hereford breeds predominate with Shorthorns second in quantity and taking first place in certain localities. Through an effort to prove that the range gives a higher yield under common use of both cattle and sheep many of the cattle breeders are also sheep operators. Associated especially with the sugar beet industry in Utah, cattle feeding has become an important factor and more than 30,000 head of cattle were fattened in the feedlots during the last year. The livestock industry has also cooperated with other agencies in eliminating poison weeds on the range.

William Peterson
Utah State Agricultural College
Logan

Emery County Agricultural Agent:

Beef Cattle: Beef cattle production is the major agricultural industry in Emery County. There are approximately 447 permittees on the National Forest, grazing about 8,200 head of cattle. Besides the permitted stock there are approximately 8,300 head grazed on farms, leased ground, and on the public domain. Thus, the beef cattle industry affects about 60 percent to 70 percent of the farms of the county.

The cattlemen are organized into five associations which are fully organized and active and have been contacted regarding many of the conditions with which their members are confronted.

The ranges are already over-stocked to the extent that expansion of the industry is impossible, and unless moisture conditions change for the better a slight reduction may be necessary. Information gathered showed, also, that as a general rule bulls are not fed to be in condition they should be for breeding season on the summer range. This was strongly indicated by the fact that the majority of producers do not get more than a 60 percent calf crop and many get even fewer. Another reason for this small calf crop, it was found, was the poor, under-nourished condition of the breeding cows during the late winter and spring months. Many of the cows have been found too weak and starved to carry their calves to maturity.

Utah- 1936 (Continued)

The beef cattle committee of the County Planning Committee made the following recommendations:

1. All weaker cattle and especially breeding cows should be fed during the late winter and spring to insure a larger calf crop.
2. A better selection of breeding stock should be made.
3. More herding should be done on the summer range.
4. The calf crop should be made as uniform as possible to insure better prices.
5. Cooperative buying of bulls and selling of cattle.
6. Cooperation of stockmen to protect their interests on public ranges.
7. Maintenance of small units of beef cattle are discouraged.

Merrill E. Cook

Castle Dale

WASHINGTON

1932

Animal Husbandry Specialist:

Improvement in Breeding: In the Mountain counties there are many cattle of nondescript breeding which are well suited for neither dairy production nor beef production. There should be a strong effort to introduce better beef sires where it is desirable to produce beef cattle. The crossing of the dairy and beef type should be discouraged because after several crossings of this kind, the cattle deteriorate very rapidly.

Livestock Losses: The increasing use of livestock trucks since roads have been improved into the mountains and other outlying districts has revived cattle stealing. At the present time this is a more serious problem to the cattlemen than the disease hazard. Several county cattle protective associations have been organized.

Hector McDonald

State College of Washington

Pullman

1936

Animal Husbandry Specialist:

Range Livestock Program: The range livestock conservation meeting in Spokane was generally well attended. Suggestions from the ranchers as to whether the program should be put into effect or not, and if so, what practices would constitute range improvement, were made rather freely. Most ranchers were pleased and surprised to know that such practical things as spring development, drift fences, and deferred grazing were considered range-building practices. As a result of the meeting the following suggestions for practices upon which payments would be made were as follows:

Washington-1936 (Continued)

1. Deferred grazing.
2. Rotation grazing.
3. Natural revegetation.
4. Artificial reseeding.
5. Water development.
 - a. Wells
 - b. Reservoirs
 - c. Springs
 - d. Pipe lines
6. Rodent control; predatory animal control.
7. Fencing.
8. Contouring.
9. Water spreading.
10. Trail development.
11. Poisonous and noxious weed control.
12. Windbreaks.
13. Insect Control.
14. Fire guards.
15. Loading and grading corral.

It was the feeling of most ranchers present that if the program could be gotten under way immediately, many would be willing to take advantage of the program in the fall of 1936.

The extension animal husbandman gave assistance to those counties desiring help in explaining and discussing the range livestock program. By the end of the season 574 range examinations had been completed, covering 1,415,715 acres of range land, involving maximum benefit payment of \$80,000.

Con S. Maddox
State College of Washington
Pullman

Garfield County Agricultural Agent:

Livestock Situation: Livestock, particularly beef cattle, have overgrazed and depleted the range land, and cheat-grass with a lower carrying capacity is crowding out the native bunch grass. This is true also of the Forest Reserve, where the number of cattle allotted to the livestock men for summer grazing has been greatly reduced of late. This means that available native forage has become inadequate for the number of cattle. The quality of market cattle is affected by this condition as well as by the use of some farmers of poor breeding stock.

The various adjustment and conservation programs initiated are having a considerable effect upon the range livestock business. Farmers with livestock and new grass seedings are finding them of great supplemental use, particularly during the dry summer months. Many livestock operators without cultivated pasture are renting such from those farmers who do have new legume and grass pastures. Some farmers are finding it will no longer be necessary for them to maintain allotments on the Forest Reserve. A change is gradually being brought about in the livestock business. Through the tours and 4-H Club work, a greater interest is being created in good livestock.

Marion F. Bunnell
Pomeroy

Pend Oreille County Agricultural Agent:

Beef Cattle: Interest in beef cattle in Pend Oreille County is very evident among our farmers who have a considerable acreage of river bottom or wild hay meadow lands. This county is especially blessed with an abundance of free range for summer pasture. Our winter feeding situation, however, is a bit different. We must figure on a six month's feeding period. In addition to the straight beef project, interest is developing for a dual-purpose animal.

● Washington-1936 (Continued)

They want a cow that will give a fair production of milk, and, at the same time, will produce a reasonably good beef animal. They are freshening their cows in the fall and milking them during the winter months when labor is plentiful and drying them up during the summer haying months.

V. W. Long
Newport

WYOMING

1935

Uinta County Agricultural Agent:

Livestock Handling: The severe drought in 1934 made hay so scarce in Uinta County that stockmen wishing to keep over any number of cattle were obliged to either ship in hay or ship out their livestock. The railroads made a one-way rate to California and return. This made it possible for stockmen in Uinta County to ship their cattle to California cheaper than they could ship in hay.

During the last part of 1934 approximately 4,000 head of cattle from Uinta County were shipped to California. Most of these cattle were put in fenced pastures. It cost approximately \$1.25 per head per month for feed and care.

The feed in California made excellent growth and most of the cattle gained from 250 to 300 pounds. Many of the stockmen sold their entire herds in the early spring at a neat profit. Most of the old residents in California were selling their cattle in May. All stockmen who sold during May received much better prices than those who held until June and July. The stockmen in Uinta County have been trying to get the railroads to lower their rates on livestock every year. It would make an increase of business to the railroads and help out the stockmen considerably if cattle from the western part of Wyoming were sent to California for winter and shipped back to Wyoming for the summer, and it would mean a gain of approximately 300 pounds per animal.

D. S. Ingraham
Evanston, Fed. Bldg.

1936

Campbell County Agricultural Agent:

Livestock: The principal industry in Campbell County, - agriculture, - suffered a tremendous set-back in 1936, because of a severe drought and a heavy grasshopper infestation. The entire north half of the county, 1,600,000 acres, was as bare as a road by the middle of June. The south half of the county fared somewhat better as the infestation of grasshoppers was not so general. There were no grain crops harvested in the entire county. Some hay and emergency roughage was harvested in the south half of the county. Nothing was salvaged in the north half. Practically 100 percent of the livestock on the ranches in the north half of the county were sold outright or moved to other areas to pasture by the middle of July.

F. E. Dominie
Gillette

Herd PracticesCALIFORNIA

1934

Modoc County Agricultural Agent:

Culling of Cows and Heifers: It has been the common practice among a good many of the cattlemen to sell young, fat brood cows in the fall of the year on account of having to dispose of a certain number of cows each year; also to sell a certain number to provide an income. On most of these ranches the old or undesirable cows would have calves and would be thin and could not be marketed, so young cows in good condition and fat would have to be sold in place of these old cows.

This practice has reduced the quality of the cows of the herd. The only way possible to correct this practice is not to breed or to spay cows that are undesirable or past their useful age, and spaying these cows and undesirable heifers eliminates this practice of disposing of the best cows and gives the operators a chance to dispose of the one he wishes to sell at a fair price.

Doctor A. R. Asbill, of the State Department of Agriculture, makes two trips into the county each year and does this work for 50 cents per head. Last year there were approximately 600 cows and heifers spayed on 15 different ranches.

John C. Hays
Alturas

1935

Animal Husbandry Specialist:

Herd Management: This test began in 1932 in Ventura County and involves several hundred head of cattle and about 100 breeding cows. Controlled breeding, rotation of bulls, and timely supplemental feeding have been followed for three years. The calf crop has been increased from 62% to 95%. The calving period has been reduced from five months to three months. The quality and uniformity of the calves have decidedly improved. A field day was held at the ranch in February to see and discuss three year's results. Seventy stockmen from three counties attended.

L. H. Rochford
State College of Agriculture
Berkeley

California, continued.

1936

Lassen County Agricultural Agent:

Herd Management: Breeding Test. The one on the J. H. McClelland ranch started in the fall of 1933, at which time the two bulls were brought to the ranch from the State University, but no breeding was started until the spring of 1934. These two bulls have been bred to selected cows for three years. From the first breeding we now have approximately 50 yearlings. On grading the yearling steers it was found that out of 10 head of steers graded eight would go into the market class of choice, and that these steers were approximately one grade better than a cross-section of the same herd bred to the ordinary range bulls. In grading the heifers it was found that the bulk of them went into the class of good and that they were approximately a grade better than a cross-section of the herd.

One of the difficulties felt in carrying on this program was identification. From now on a hot numbered iron will be used for this purpose.

One livestock field day was held at the McClelland Ranch, at which time the results of the breeding program in cooperation with the University was demonstrated. At the same time a cattle grading demonstration was conducted by L. H. Rochford, Livestock Specialist for the Extension Service. More time has been spent on this one project than on any other project connected with the extension service.

T. S. Brown
Susanville

Santa Barbara County Agricultural Agent:

Beef Cattle Improvement: A new department in the Santa Barbara County Farm Bureau was organized during this year, known as the Live Stock Department and embracing meat-animal industry.

The purpose of this new department was to disseminate information to the livestock growers of the County concerning their industry and to cooperate with all other livestock organizations. A bi-weekly letter has been mailed to the livestock growers of the county giving them current information on marketing, drought conditions, feed, and breeding trials being conducted under the supervision of the Agricultural Extension Service in this and other counties.

A field meeting on grade of marketing classes of steers was held, at which a large attendance of beef cattlemen were present. Louis H. Rochford, extension specialist in Animal Husbandry, led the discussion.

S. A. Anderson
Santa Barbara, Ct.Hs.

Siskiyou County Agricultural Agent.

Breeding Herd Management: Four beef cattle producers carried on Beef cost records during the year beginning March 1, 1935 and ending February 28, 1936.

The cattle of each cooperator were weighed out on March 1, and the number of animals of each class determined. A record is kept each month of the number

California, 1936, continued.

of cattle sold, number bought, feed consumed, pasture expense and labor and equipment costs.

The average costs as determined for the four cooperators for 1935 are as follows:

Cost of calf at birth.....	\$21.12
Cost of calf at 1 year of age.....	28.42
Cost of heifer at 2 yrs. of age.....	41.40
Cost of steer at 2 yrs. of age.....	44.96
Net profit on 2-year old steers.....	11.76
Net profit on 2-year old steers per cwt.....	1.01
Cost of steer at 3 years of age.....	65.25
Net profit on 3-year old steer.....	- 2.61
Net profit on 3-year old steer per cwt.....	- .23

In addition to carrying on the beef cost study, one of the cooperators selected from his breedingherd of 200 cows 100 of the best type animals for producing future breeding stock.

The calves dropped from the top herd appear to be quite superior in type and conformation to those dropped by the cull herd.

M. V. Maxwell
Yreka

COLORADO

1934

Animal Husbandry Specialist

Controlled Breeding: F. R. Carpenter, manager of the Dawson Cattle Company, has demonstrated again this year what can be accomplished in controlled breeding of range cattle.

He has followed the same plan as in the previous five years, bringing the cows and breeding heifers in from the range about July 1 and placing them on his meadows, where the feed is much more abundant than on the range. After they have been on the pasture a few days and started to gain, the breeding operation starts. The bulls are kept in two small pastures, one at either side of the meadow, where they are fed grain during the breeding season. When the cow comes in heat, one bull is turned out and driven to the cow, allowed one service, and placed back in the bull pasture. At no time is any bull allowed more than three services per day and usually only two. During this year one man did the breeding of 750 head of cows and bred 500 of them in a five-weeks' period, all of them being bred by August 25. In this way practically all of the calves are dropped within a six-weeks' period.

This last year five of the bulls sired over 100 calves each.

A. C. Allen
State College of Agriculture
Fort Collins

Colorado, 1934, continued.

Moffat County Agricultural Agent

Range Herd Management: Work was started on this project two years ago with the Little Bear Cattle Association, when a resolution was passed by that Association requesting that the agent assist in the inspection and selection of bulls to be placed in the Little Bear pasture. The association requested that the local forest ranger, the local county agent, and a third party inspect and pass on all range bulls; also that a check of each member's breeding cattle be made and that they be required to furnish one bull for each 25 cows. E. A. Schrader was selected as the third party and early in March of this year the committee made an inspection of the various herds. With the exception of one all bulls were passed and after a short explanation of what was desired and contemplated the owner of this animal willingly agreed to dispose of him and get a more desirable individual in his place.

T. J. Snyder
Craig

1936

Animal Husbandry Specialist

Range Herd Management: This project was started four years ago when the Little Bear Cattle Association passed a resolution requesting assistance from the County Agent in inspection and selection of range bulls.

Two members of the association, with the agent, recently made a tour of inspection for registered Hereford bulls for place in the Little Bear pasture for the association members. Ten very fine registered bulls were purchased from near Steamboat, Colorado.

The results of this project are showing up in the improvement and quality of the herds and the higher market prices being obtained for the stock shipped.

During the past three years we have advocated the pool buying of bulls. We feel that, where several men are running on a given range together year after year, if the bulls used on these cows are purchased by a committee, a much more uniform lot of bulls will be used and will fix the type of the offspring.

The past two years have shown rather gratifying results. We are asked to help locate these bulls and in many instances help with their selection.

Many dollars are being saved the men buying these bulls where they can take several from one breeder. The cost of these bulls is prorated to the men getting them, and as a result, the calf crop is evening up a great deal. As this phase is carried out and the heifers of these bulls come into production, we will see even greater and faster improvements in our commercial cattle.

A. C. Allen
State College of Agriculture
Fort Collins

Colorado, 1936, continued.

Las Animas County Agricultural Agent

Herd Management: An outstanding demonstration of what can be accomplished by following some of the principles of herd management that are advocated by the extension service has been given by the Myers Brothers of Hoehne. The following excerpt from a news article describes their methods and results:

"MYERS BROTHERS GET A CALF CROP RECORD:

"John and Ernest Myers, of Hoehne, raised 215 calves and 230 cows during the summer of 1935.

"In 1933 their calf crop was 78%. In 1934 the calf crop was 88%, and in 1935 their calf crop was 93.5%.

"The Myers Brothers own and operate 340 acres of irrigated land and in addition have 5,000 acres range pasture. The irrigated acres are operated under a general farm system. The principal crops are alfalfa, corn, small grains and beans. All the feed crops produced are fed to the livestock on the farm.

"The production of the 1935 calf crop began in June of 1934. At this time the cows were moved from their spring pasture to their summer pasture. The summer pasture consists of 2,500 acres of level ground, free of brush and canyons. In normal years there are usually eight water holes where the stock can secure water. Salt was provided for the stock at all times. The salt was not left near the water, but was placed in locations where the grass is best. By this practice the stock was kept moving about over the pasture. The bulls were turned into this pasture about June 20.

"The cows and bulls were left on the summer pasture until October. In October the herd was moved back to the same pasture they had been using in the spring. The cows were left in the fall pasture as long as the grass was good and were moved to the irrigated farm in January.

"When the cows were moved to the farm they were placed in a dry lot for winter feeding. The winter feed consists of two feeds of bean hulls and one of corn silage. Both feeds were fed in bunkers. Enough bean hulls were fed that the cows had all they wanted, but only enough fed so that the ration was all eaten. Five to six pounds of silage per head was fed daily. Alfalfa hay was substituted in place of the bean hulls about the first of March.

"Calving was started in April. By the 1st of May half of the calf crop had arrived. Shortly after the 1st of May the cows were moved to the spring pasture where the balance of the calf crop was born.

"Some of the other practices followed by the Myers Brothers, which no doubt have quite a bearing on the calf crop, are enumerated as follows:

1. The majority of the calf crop comes over a period of only two months, making it possible to concentrate on the care of the calves when they especially needed it.
2. Cows that fail to reproduce are culled out of the herd and replaced by heifers.
3. None of the cows are over seven years of age.
4. Thirteen bulls were used.
5. None of the bulls were over six years of age.

Colorado, 1936, continued.

"The results of a four year study made on 22 ranches, which was completed in 1925, showed the average calf crop to be 56% for all ranches over the period studied."

Controlled Breeding: Recognizing the need of at least one purebred Hereford herd which would be a source of supply of breeding stock to the stockmen of the county, A. T. McCarty of Trinidad purchased 30 head of registered cows which he has placed on his ranch near Stonewall. Mr. McCarty intends to produce purebred Herefords, which will be sold to the local stockmen for replacements in their foundation herd.

In a county which produces as much beef cattle as Las Animas County, an enterprise of this kind has been greatly needed. Every possible effort will be made to insure the success of the venture from a financial standpoint so that not only Mr. McCarty will find the enterprise profitable but that stockmen will have a local supply of breeding stock.

Mr. McCarty intends to follow the practice of controlled breeding and creep feeding in connection with his herd.

Floyd E. Brown
Trinidad

NEVADA

1933

Humboldt and Northern Lander Counties Agricultural Agent

Purebred Bulls: Since the days of the covered wagons, Paradise Valley has been the leading livestock center of the State of Nevada. Durham cattle have been bred in this community since its inception into the livestock business. The best purebred bulls available in the West have been at the head of the herds in this district.

It is only in recent years that the cattle buyers and butchers have demanded anything more than just "beef" without any specifications as to breed. However, buyers no longer want the Durham steers but are picking the Hereford as their first choice.

The contention of the packers is that the Durham finish out bigger and rougher than the whitefaced steers; that the butchers want small quarters of meat when ordering. And as the Hereford steer rounds out at a smaller size they are more in demand.

For the past two years, the agent has been talking Hereford bulls to livestock men in Humboldt County. At this time it is believed that these stock-growers are ready to change purebred Hereford bulls.

The biggest part of the job rests with getting a few leading stockmen interested to the point of introducing Hereford bulls to replace their Durham stock. E. Reinhart Land & Livestock Company of Winnemucca, H. K. Harvey, Buckingham Brothers, Jack Forgnone, John Forgnone, Steve Boggio, Arnold Schwartz, and Irvin Case have agreed to place purebred Hereford bulls as their herd sires.

Paul L. Maloney
Winnemucca

NEW MEXICO

1932

Grant County Agricultural Agent:

Herd Improvement: The most encouraging thing that has happened, and the greatest talking point we have had in the encouraging of better quality stock, came up through the sale of high-grade calves this fall. There were shipped 1,000 head to feeders in Iowa and Kansas. Part of these are being fed out for International Fat Stock Show this coming year. They were bought by men who for years have bought through the Highland Herford Association at Marfa. It is the first time that calves have been shipped directly from this county to feeders in the corn belt without losing their identity as New Mexico cattle. These calves brought from $5\frac{1}{4}$ to $5\frac{1}{2}$ cents per pound, and averaged in weight about 450 pounds. The feeders were very much pleased with the quality stock bought, and we feel that with the strides we have made in improving the quality of cattle here we may expect to make much larger sales directly to feeders in the future. Should there not be a four-county association by next year, at least we will have an organization of high-grade breeders to contact feeders direct.

In the shipments seen this year anyone could see that big improvement in the quality of all the calves and steers had been made over just a few years ago. In the past four years I feel that Extension work has been brought directly or indirectly to every ranch owner in the county, as even the smallest have bought registered bulls and use them almost entirely. The improvement in the herds in the county has been brought forward, not so much by an attempt to have several breeders get superfine quality stock, but to have the improvement county-wide so that we will build up a high-type of quality in large numbers and ship out uniform calves and steers.

Purebreds: For the first time in recent years local registered bulls have been sold to local cattlemen at prices that were higher than registered bulls of the same type were being sold for elsewhere. There has always been a sort of a prejudice against locally raised purebreds, the opinion being that registered stuff lost scale when raised on the range. This was true in the past under Public Domain, as the registered stock was the first to show lack of size, particularly in bone growth. However, four ranchers in the county during the year sold approximately 150 head of yearling bulls at above average prices. These same ranchers have stressed fewer and better cattle per section and there certainly was no indication that these animals were losing scale.

Three other cattlemen who have made no attempt to go into the purebred business but who are raising their own bulls have also been successful in keeping up the size the compares favorably with those of the same age shipped in. These ranchers have from 30 to 40 head of registered cattle and hope through this method to get away from the high overhead necessary to keep registered bulls on their ranches.

From the experience we have had so far it is felt that can we not only raise bulls for local ranchers that are as good as those we ship in, but the bulls will service the purpose much better. Bulls shipped as yearlings always are undersized; two-year-olds cost considerably more and are valueless for

New Mexico, 1932, continued.

practically a year until they become acclimated. The locally raised bulls do not require a long period to adapt themselves and their feet are in much better condition to work in mountains. This range handicaps animals that have been brought up in soft pastures or moist countries. Even during hard times the purebred breeders have made more money per acre than any other cow-man and they have carried less cattle per acre than other cattlemen and consequently their ranges have also improved in quality. There has been no attempt to get anyone into the straight purebred business unless he was in all ways qualified both in knowledge and equipment.

Stuart Stirling
Silver City

1933

Grant County Agricultural Agent:

Purebreds: One hundred head of purebred bulls have been shipped into the county during the past 12 months. Of these, 45 were exceptionally good, coming from the T. E. Mitchell herd and were bought by E. M. Sawyer. The others were just good range bulls.

Two herd bulls were also shipped into the county, one on a trade for a herd bull that had been used for several years and the other through purchase. Both of these animals are very good.

Two carloads of purebred heifers were shipped in during the year, 15 of these being bred two-year-olds and the other car yearlings. The two-year-olds were bought by Robert Royal to go into his foundation herd and the other by Charles Parks. Both of these men are gradually getting into both the purebred and high grade business.

Last year was the first year that cattle were shipped out of the county direct to feeders who made a business of going into feeding in a big way. In all cases they seemed to be exceptionally well pleased and have put in repeat orders for this fall. Two cars of Grant County feeders topped the Chicago market on different days. They also topped the Kansas City market several times. Those topping the Kansas City market were graded by the county agent. From present indications about 12 of the big ranches that have gone into the high-grade business will sell most of good stuff to feeders here last year, men who a few years ago got all their feeders from the Big Bend country. These men have said that under present conditions they just could not afford to take chances on feeding stuff of poor quality. The really high grade yearlings that will be shipped from the county this winter will probably reach between four and five thousand head.

Stuart Stirling
Silver City

1934

Chaves County Agricultural Agent:

Herd Improvement: Among the facts revealed as a result of the Adjustment Program in connection with livestock has been the great number of inferior animals yet on the range. Culling of female herds has never been actively practiced only as old age eliminated inferior cows. These, of course, leave a number of descendants of only slightly better quality than the original. Inadequate pasture

New Mexico, 1934, continued.

has also prevented the proper growth of heifers, so the grade of cows on the range is far short of what it should be. This condition will perhaps never be eliminated by any wholesale exchange of present herds for better ones, but it seems that a few additional good cows could be added and the offspring kept so that under better conditions of pasture the general character of the cattle would be improved. We believe that the ranchmen here are in accord with this idea, but unless the stress of economic conditions makes it compulsory it is doubtful whether or not very many ranchmen will voluntarily make any rapid improvement in cow herds.

J. R. Thomas
Roswell

OREGON

1934

Crook County Agricultural Agent

Herd Management: A survey of factors influencing calf crops was made during the year. Percentages ran from a low of 55 to a high of 99. Those operators securing high calf crops followed the practice of keeping the bulls in good condition and following the system called pasture breeding. Bulls were not permitted to run with the herd the year round. Dry cows were disposed of for beef as early as possible. Young bulls were held in reserve and aged bulls were disposed of as soon as they showed signs of age.

W. B. Tucker
Prineville

UTAH

1935

Beaver County Agricultural Agent:

Herd Improvement: In the beef type cattle improvement program, 24 registered Shorthorn and 17 registered Hereford bulls of acceptable type were placed with 22 range cattle producers. Eleven of the Shorthorns and five Herefords were from local breeders. Arrangements are about completed now for the purchase of two carloads of registered Herefords breeding stock for local producers.

1936

Strict adherence to the bull requirements on the public domain under the Taylor Grazing Act necessitated the purchase of additional registered bulls of the beef breeds. After inquiry in three States and several counties in Utah, a committee was selected and a trip made to secure registered bulls. Fifty-nine registered bulls of approved type and breeding were purchased by 28 farmers.

Lew Mar Price
Beaver

Utah, 1936, continued.

Garfield County Agricultural Agent:

Herd Improvement: Nearly 90 percent of the cattle grazed in the past have been Shorthorns. The trend now is to Herefords, and they are gaining in popularity among cattlemen. Three cattle associations voted this year to sell all grade bulls and Shorthorn bulls and replace them with registered Hereford bulls by 1937.

In the county this fall 100 head of purebred Hereford heifers were sold. Herbert Gleaves of Antimony is the only purebred Hereford breeder. He reports selling 15 bulls from his herd.

Joseph Muir
Panguitch

WASHINGTON

1934

Stevens County Agricultural Agent:

Herd Improvement: This is the first time since the annual shows in Spokane have been held that the Grand Championship has been awarded to a bull produced in Stevens County and it is believed that the fact that the successful breeders have for many years in the past secured the best bulls they could find to head their herd, has directly contributed to this year's success in producing a grand champion. Many of their younger bulls have been disposed of to other breeders within the county and this is assisting in improving the quality of cattle being produced for market on the ranges and farms of Stevens County.

A. K. Millay
Colville

Controlled breeding

CALIFORNIA

1933

Animal Husbandry Specialist:

Controlled Breeding: The Animal Husbandry Division of the State University, has decided to develop the best bull calves from the University herd for use in the beef cattle improvement program. Such bulls will be loaned to commercial beef cattlemen who are cooperating with the Extension Service on a definite herd improvement project. Two Hereford bulls have already been placed with J. H. McClelland, a cooperator in Lassen County.

This fall Mr. McClelland selected 75 cows from several hundred head of breeding cows, to be known as the foundation herd. These cows will be pasture-bred on the home ranch to superior-type Hereford bulls. The remainder of the herd will be managed and bred under typical Lassen County range conditions. Each year replacement heifer calves will be saved from the foundation herd. All cows in the foundation herd are branded for identification. Accurate performance

California, 1933, continued.

records will be kept on these cows and records of all costs obtained.

In Ventura County the Rancho Matilija, with a breeding herd of 125 high-grade Hereford cows, started a controlled breeding project last spring. The object here is to increase the calf crop, eliminate off-season calves and cut down costs. The first step was to supply during the breeding season late last spring a temporary pasture of green feed after the native feed had dried up. This flushed up the cows, causing them to breed more readily. In addition, the practice of rotation of bulls was followed. The controlled breeding project here is carried in conjunction with a calf creep-feeding program.

L. H. Rochford
College of Agriculture
University of California
Berkeley

1934

Animal Husbandry Specialist:

Controlled Breeding: A district demonstration of the value of controlled breeding by rotation of bulls and supplying supplemental green feed during the breeding season was started in Ventura County in late 1932. In 1932 the calf crop on the cooperating ranch was 62 percent, and the calves varied more than 4 months in age. In 1933, after practicing rotation of bulls and culling, the calf crop from 124 breeding cows was 83 percent, with a variation of $2\frac{1}{2}$ months in age. In 1934, by continued rotation of bulls, culling, and by supplying better pasture, the calf crop from 91 cows was 92 percent with only 42 days variation in age of calves. This project is carried in conjunction with a calf creep-feeding demonstration, and the results of the controlled feeding program are reflected in the creep-feeding of the calves. A field day will be held at the cooperating ranch about February 1, 1935. At this time the progress of this demonstration will be shown to stockmen.

Following the recommendation of the Extension Service on rotation of bulls, 15 cattlemen in Monterey County report an average increase of 15 percent in calf crop.

L. H. Rochford
College of Agriculture
University of California
Berkeley

COLORADO

1932

Animal Husbandry Specialist:

Controlled Breeding (Routt County): Again this year was demonstrated what can be accomplished in controlled breeding of range cattle.

All through the range section of Colorado stockmen have experienced difficulty in securing a satisfactory calf crop under range conditions. Formerly contagious abortion has been blamed very largely for a low percentage

Colorado, 1932, continued.

calf crop. Mr. Carpenter, of the Dawson Ranch, has shown rather conclusively that improper management problems have been largely responsible for most of this trouble. For four years Mr. Carpenter has cooperated with the Extension Service on this problem and the past two years very definite results were obtained.

The plan employed is as follows: About July 1 the cows are brought in from the range and placed in the meadows where feed is exceptionally good. After they have started to gain, the breeding operations start. The bulls are kept in two small bull pastures, one at either side of the cow pasture, where they are grained. When a cow comes in heat, one bull is turned out and driven to the cow, allowed one service, and placed back in the bull pasture. A bull is not allowed more than three services per day. At calving time an attendant is on hand to help in case a cow or heifer needs assistance and to see that the calf gets on its feet and nurses.

This seems impractical on first thought, as it would seem to require much extra labor; however, one man bred over 500 head of cows this year. Mr. Carpenter has not only increased his calf crop over 20 percent but is getting practically all of his calves within a 45-day period and from 80 to 85 percent of them within 30 days. This year he had 120 calves from one bull. He has lowered the bull cost per calf from \$4.00, as in previous years, to 86 cents this year, and expects to get it to 67 cents per calf. This year he received a 98 percent calf crop from nearly 500 cows.

Field Day: On July 9, a field day was held with an attendance of 1,200 people from western and northwestern Colorado and Wyoming.

At the field day this year advantage was taken of the opportunity to present to the group and emphasize the advantages of:

1. Breeding Herd Management.
2. Selection of Better Bulls.
3. Meadow Improvement.
4. Use of Home-Grown Meat.

The methods employed in this demonstration are having a far-reaching effect. There are now cattlemen throughout the State practicing controlled breeding as demonstrated at the Dawson Ranch or in a modified form.

A. C. Allen
State Agricultural College of
Colorado,
Fort Collins

1934

Moffat County Agricultural Agent:

4-H Cattle Breeding: The Hereford Breeding Club was organized for the fifth year with 20 members, under the leadership of D. J. Davis. This Club was started in 1930 when 19 head of registered heifer calves were purchased from the Dawson Cattle Company. In 1931, 20 head of calves were purchased, and in 1932, 24 head were purchased. Since that time no calves have been

Colorado, 1934, continued.

bought. In January of 1932 the Club bought a Hereford Bull from the Ken-Caryl Ranch Company, of Littleton, Colorado. This animal is being financed through the Moffat County Calf Club Fund on a four-year basis. The Club has kept up the payments, including insurance.

At the present time the club members own 130 head of registered Herefords. This includes most of the original cows, together with their increase.

Several of the members have yearling and two-year-old bulls for sale and unless these are moved at private sales the club is planning an auction sale next spring.

The members are quite widely scattered over the county and meetings are held only during the summer months and at one of the ranches where cattle are inspected and judged.

In the project, club members are taught to keep a complete record necessary for the registration of cattle, the art of tattooing, and the preparation of applications for registration.

It appears from this work that several boys and girls will continue in the registered Hereford work and develop a number of real registered herds within the county. Until the time this work started there were less than 10 head of registered Hereford cows in the county.

T. J. Snyder
Craig

1935

Jackson County Agricultural Agent

Controlled Breeding: Ranchers feel that the percent calf crop is not as large as it should be in many cases. It is the common practice to turn the bulls in with the cows in the summer on the Forest Reserve. Of course the country is rough and timbered, which often allows cows to go through the breeding season without contacting the bulls.

One rancher reports that he has obtained a 10 percent increase in his calf crop by dividing his large number of bulls into three groups. Group 1 is placed with the cows for two weeks and then taken out. Then group number 2 is placed with the cows for two weeks, followed by group 3 for another two weeks. All of the bulls are then placed with the cows.

Mr. Murphy and John Haworth placed 150 head of cows in a fenced pasture and practised controlled breeding with this group this summer. Cows were taken from the main pasture and placed with the bull for service. These cows will be held separately from others until after calve so that the percent calf crop may be determined.

L. A. Acott
Walden

Feeding

ARIZONA

1932

Animal Husbandry Specialist

More cattlemen are practising weaning and supplemental feeding at the same time. Cottonseed cake is the chief feed for this purpose, although some are adding alfalfa hay and grain hay. Not only do the calves do better through the winter, but the heifers that are kept for the breeding herd are accustomed to supplemental feed and will go right along should supplemental feeding become necessary later. However, some still feel that supplemental feeding should be postponed to the last moment because of the danger of changing the grazing habits of cattle. Although early feeding has been successful in some sections, there is some question on this point as to Arizona, because it is quite different from other sections in topography, vegetation, and other features. Most of the cattlemen do not, and cannot, produce roughage for more than a few head, and of course, purchase of this feed is out of the question; but feeding of cottonseed cake is profitable, at least under some conditions. The best results seem to be obtained when the daily ration is concentrated into two to four days' supply and fed every second or third (or fourth) day. Better results are apparent also when cottonseed cake is fed as near as possible on the grazing ground, rather than in corrals and at water holes. Also, feeding of the cake seems most beneficial when begun while the cattle are in thrifty condition.

One owner reported that a group of calves fed cake at a cost of 75 cents per head brought over \$2.00 per head more than those from the same herd that were not fed cake. Another case was reported where 150 pounds of whole cottonseed per year for two years, or a total of 300 pounds per head, was fed to steers. When marketed as short two-year-olds, they averaged 893 pounds per head at the ranch. The cottonseed had cost not more than one cent per pound laid down at the ranch, and the cattle were at least 150 pounds per head heavier than they would have been otherwise. The extra weight sold at \$4.00 per cwt, or a total of \$6.00.

Dehorning of cattle is fast coming into favor, and steers two years old and over are becoming popular as the use of hay and pasture increase. Older steers are in such demand that common aged steers from Mexico have been put on the irrigated pastures. Encouraging results have been observed from feeding of dicalcium phosphate as a supplement to salt.

C. U. Pickrell
College of Agriculture
University of Arizona

1934

Pima County Agent:

Supplementary Feed Production: The drought has demonstrated the value of supplementary feed production through the use of flood water.

Arizona, 1934, continued.

The Tortuga Cattle Company. H. Manning, J. C. Kinney, cattlemen, and the U. S. Indian Service near Sells, Arizona, are some who resorted to their Johnson grass hay that had been stacked in more favorable seasons and to the Johnson grass pastures, to furnish their livestock with feed until the late rains brought on the natural range forage. The Tortuga Cattle Company fed Johnson grass hay to a large number of poor cows that had calves. Although they lost a number of head through lack of range feed, the feed they had stored kept down their losses. They also gathered the poorer stock that could be driven and placed in their Johnson grass fields to pasture. The Johnson grass responded much more quickly to the meager rains than the range grasses and was pastured all summer. On this account the Company was unable to cut much hay for stacking this year.

There are probably 6,000 acres of Johnson grass grown about the county on flood plains that lie adjacent to washes that drain large areas. During the times of flow the washes either overflow their banks and spread over these plains, or ditches are constructed to divert the water from the washes and convey it to the fields. Johnson grass thrives on these flood plains and furnishes large quantities of feed. The grass can stand much drought and when the rains finally arrive the grass-roots respond quickly, furnishing good feed.

Mr. W. T. Ferguson, who has the old Robles Ranch in Avra Valley, cut some hay from his Johnson grass which he raises through the use of floodwater. Mr. Ferguson's range was very poor this year and he was able to reduce his losses very materially by being able to pasture many of his older, poorer cows that had calves.

C. B. Brown
Tucson

CALIFORNIA

1933

Animal Husbandry Specialist:

Supplemental Feeding: Recent investigational work has shown that phosphorus is the mineral most commonly lacking on certain California ranges and that its lack may retard growth and development of animals; and that needed phosphorus can be supplied through mono-calcium-phosphate, steamed bone meal or tri-calcium-phosphate added to salt.

Daulton Brothers, Hereford breeders near Madera, are conducting a test on the value of adding phosphorus to salt for developing young heifers that graze on dry grass range. This test started in July 1933, with 65 yearling heifers, and will require two years to complete. The heifers are divided into two pastures; those in one pasture receive mono-calcium-phosphate with their salt; in the other pasture the heifers have access to salt but no phosphorus supplement. Both groups will continue on this basis until green feed is plentiful. At that time the phosphorus supplement for the one bunch will be stopped. In January the heifers will be bred. They have been marked for identification. It is planned to place the same animals in the same pastures again next year when mono-calcium-phosphate will be fed to the one bunch during the dry-feed season. The test will continue through the first calving of these heifers. Complete records are kept on the test.

California, 1933, continued.

Santa Barbara County Agricultural Agent

Range versus Concentrate Feeding: For years the procedure has been to carry the feeders along on range with little, if any, concentrate supplement feed. Such cattle are then marketed directly off grass, principally as two-year-olds or three-year-olds, depending on the seasons and kind and quality of cattle. Due to the increased demand for lighter cattle with grain finish, because of increasing production costs, and speculation in handling aged cattle, the Suey Ranch management has given serious consideration to marketing a portion of their cattle as fed-long yearlings. In order to secure definite data as to the practicability of selling younger fed cattle from the Suey Ranch a definite test is being conducted in cooperation with the Agricultural Extension Service of Santa Barbara County and the University of California.

Approximately 2,500 cattle are involved in the test this year. They were 1932 Arizona Hereford weaners of good quality bought by the Newhall Land and Farming Company and shipped to the Suey Ranch in November 1932.

For the test, 30 head of average steer calves were taken from the herd on February 17 to be fed out for market as long-yearlings. In July, 600 of the heifers and 100 of the steers from the main herd were placed on feed in drylot at the Union Sugar Company Feed Yards, Betteravia. The remaining cattle in this herd will be marketed as grass cattle and will be the final check against the 30 head finished for market as fed yearlings.

S. A. Anderson
Santa Barbara, Ct. Hs.

COLORADO

1933

Huerfano County Agricultural Agent:

Wintering Cattle: T. S. Howard of Alamo wintered 45 head of mixed range cattle through 180 days during the past winter for a total of \$158.40, or \$3.52 per head, including range pasture, labor, and supplementary feed.

Mr. Howard submitted the following figures to substantiate this story: 320 acres of rough grass pasture, protected by pinions and mountain breaks, were given free use by the 30 head of mature cows and 15 head of yearling and two-year-old heifers; 200 pounds of cotton-cake per animal was given as supplementary feed during blizzards.

It required the service of one man 2 hours a day to feed the cottonseed cake. The cattle were split up into small bunches of 10 or 12 in a place, as the grass on the native pasture was anything but plentiful. The cattle wintered satisfactorily and calved normally. Feeding was begun the 10th of November and ended the 10th of May.

Colorado, 1933, continued.

THE ITEMIZED COST PER COW IS AS FOLLOWS:

Cottonseed cake.....	\$2.00
Alfalfa Hay.....	0.29
Pasture.....	0.43
Labor.....	0.80
Total.....	\$3.52

B. W. Allred
Walsenburg

1934

Douglas County Agricultural Agent:

Creep Feeding: Creep feeders were constructed in all pastures either near the salt grounds or watering places.

In those pastures where there was only one watering place and salt ground the calves ate large quantities of mixed grain, but in the pastures where the cattle watered in creeks and the feeders placed at the salt grounds the calves did not go to the feeders and eat the grain.

In the instances where grain, water and salt were all at one location it was discovered that the feeders would have to be refilled weekly after the middle of the summer.

In the other places where there was creek water and the calves did not follow the cows to the salt ground, one filling of the feeder lasted throughout the summer. No definite check was kept on the individual pastures, but calves from this ranch took Grand Champion, three champions, four firsts, one second and one third prizes at the Ak-Sar-Ben show in Omaha.

W. H. Gunther
Castle Rock

MONTANA

1934

Fergus County Agricultural Agent

Feed: As a result of the two livestock purchasing programs in Fergus County, livestock numbers have been adjusted pretty nearly to feed supplies. A large number of the livestock producers will have to depend on straw and a concentrate, possibly cottonseed cake, while in other years they had plenty of hay. Unless the winter is unusually severe, the livestock should winter about as well as other years. Death losses should not be above normal, for most of the aged and unthrifty animals have been sold.

Every effort was made during the summer to conserve all feed possible. Before harvesting started every farmer with livestock realized he would have to conserve all the straw. Farmers with little or no livestock saw a cash value in the straw and nearly every combine in the county was equipped with a buncher. Many farmers stacked their straw, using liberal amounts of salt.

One cattleman in the county foresaw a feed shortage for the winter and bought the straw and pasture on several sections of land. He put up nine stacks

Montana, 1934, continued.

of straw, estimating a total quantity of about 400 tons. The feeding value of this straw is higher than the average, many of the heads getting through the combine unthreshed. Some estimates are as high as four bushels per ton of unthreshed wheat.

By bunching the straw and putting it up in stacks for wintering livestock, more than a thousand dollars worth of feed has been conserved by this one man.

A lot of farmers hoping to winter some livestock put up Russian thistles for hay. In the eastern half of the county many stacks of thistles are seen along the roads. Some of these stacks contain a percentage of grain hays. When it was evident the drought was going to reduce the yield of threshed grain to nothing, what forage had grown up was cut for hay. In other instances, the hoppers were so bad that the only way to get anything from the land was to cut what grain crop remained for hay.

W. H. Jones
Lewistown

Extension Livestock Specialist

Thistle Hay: The Experiment Station at Fort Hays, Kansas, has recently released information in regard to feeding thistle hay to cattle. They found that ground thistle hay processed when more or less mature and supplemented with one pound of cottonseed cake per head daily, brought calves through the winter in satisfactory condition. When the thistle hay was fed alone, it was found to be unsatisfactory for wintering stock cattle.

In another test they found that- "Ground Russian Thistle hay plus four pounds of blackstrap molasses per head daily was a better ration than ground Russian-thistle hay alone, but the molasses was not so good a supplement for hay as one pound of cottonseed cake. The Russian-thistle hay, supplemented with both molasses and cottonseed cake, was an excellent stock cattle wintering ration. Russian-thistle hay plus molasses was a better ration than Russian-thistle silage supplemented with cottonseed cake."

I. M. C. Anderson
Montana State College
Bozeman

Garfield County Agricultural Agent

Cactus Feeding: The Extension Service investigated the feeding of prickly pear cactus to sheep and cattle. The cactus is prepared by singeing the spines with a large blow-torch out in the fields. Stock find the singed pear very palatable and with a protein supplement are able to survive with little other feed.

In August a circular letter was sent out to all operators in the counties explaining the experiences of ranchers in the area. At least 30 operators have secured torches for removing spines and are supplementing some cactus for hay. It is estimated that \$5,000 worth of hay has been supplemented.

O. A. Lammers
Jordan

NEVADA

1932

Humboldt & North Lander Counties' District Agent:

Wintering Stock Cattle: During the drouth last year it became necessary for stockmen of Humboldt County to move their cattle to districts where hay and pasture were obtainable.

Forty-three hundred head were moved to the Yerington, Fallon, and Lovelock districts.

These cattle were kept under different conditions and will offer an interesting study of costs for the methods of management.

Most of these cattle were kept for a period of six months. In Lovelock and Fallon the stock were on straight hay, while in the Yerington district pasture was available for the strong stuff.

The costs varied from \$9 to \$15 per head, including freight both ways and pasture and hay and herding expenses. The cheapest method was secured by a group of ranchers who placed their stock on outside range in the Indian Reservation and bought hay for the weak stock during the period of extreme cold weather.

By making arrangements with the railroad the agent secured the shipment of a loading chute from Sparks to a point directly on the feeding ground, thus enabling the cattle to be unloaded where they were to stay for the winter. By unloading at this point a drive of two days and feeding enroute was saved the owners of the cattle. The movement of the cattle to and from the county and pasture and hay for several months, was effected at a saving, over other methods of feeding, in other districts of \$6,000.

Hay: The only hay cut on the 1,200-acre ranch operated by the Bank of California was from the 65-acre test plot planted nine years ago.

This plot was planted under the prediction that alfalfa would not grow in the river bottom lands. In spite of this belief, however, the owners have secured a crop of hay every year since that time. When water for irrigation purposes is plentiful three cuttings are secured, and on drought years such as 1931, and 1934, one cutting is secured.

There was no water available for this ranch again this year and due to the fact that the ground sub-irrigates along the river, more than one ton per acre was harvested this year, while the native hay with its short root system cannot produce a crop without several irrigations each season, and then one-half a ton of native hay of poor quality per acre is a good average yield.

An abundance of alfalfa hay along the Humboldt River would offer an assurance to the livestock industry of the entire county. During droughts in the past few years many hundreds of cattle have been shipped to other districts for hay feeding during the winter. Steers are shipped to other districts that could be fed at home if the possibilities were developed to their fullest capacity along the Humboldt River.

Paul L. Maloney
Winnemucca

Nevada, continued.

1936

Elko County Agricultural Agent:

Mineral Deficiency. The fact that livestock do better on a mineral ratio composed of a mixture of salt and bone-meal or of salt and soluble phosphates has been commonly observed.

The chief problem in the range area has resolved itself into getting mineral salt to livestock on the range in a form that they can eat, without too much waste. The chief trouble has been to secure a block which was eatable and palatable for livestock and which would not crumble and dissolve when it became wet. Salt companies have been reluctant to cooperate and in some cases have refused to make mineralized salt blocks, feeling that such products would cut down on the consumption of salt. However, companies which have phosphates and bone-meal for sale have been working on the problem.

The Morton Salt Company has a calcium phosphate salt block composed of 3.53 percent calcium oxide, 3.75 percent phosphoric acid, and the remainder salt. At present, Ira Pierce, of A. W. Hesson Company, local merchant, is handling this salt block, which is being used in a more or less experimental way by many local stockmen.

Gordon Griswold, a local sheep operator, has developed a method of feeding ground bone-meal and salt to ewes and lambs in the early spring in old automobile tires which have been sawed in two making circular troughs. These are easy to carry about, are non-breakable and are an effective means of supplying powdered minerals to the sheep with their salt.

Local cattle and sheepmen are commencing to recognize the value of feeding minerals especially in southern areas of Elko County, and in addition to the salt blocks mentioned and the bone meal some of them are commencing to use mineralized supplementary feeds in the winter.

Mark W. Menke
Elko, Ct. Hs.

WYOMING

1933

Sheridan County Agricultural Agent:

Mineral Feeding: Arrangements were made through the Chicago and Salt Lake City Offices of the Anaconda Copper Mining Company to secure a limited amount of mono-calcium phosphate to be distributed to likely cooperators. Following are extracts from reports of the cooperators:

"A total of 900 pounds of phosphate was distributed to six cooperators. Cooperators paid the freight on the mineral from the Anaconda Copper Mining Company plant in Montana, this company donating the mineral."

"For the first time in several years we have wintered our cattle without concentrated feed of any kind. Everything came through in good shape, with no sickness or loss of appetite, and our losses during calving this spring have been comparatively light."

"How much of this can be attributed to the mono-calcium phosphate it would be difficult to say. We think enough of it so that we hope to continue its use next winter if it is available at a reasonable price."

Wyoming, 1933, continued.

"I have not seen them chewing old bones as they usually did, so suppose it is supplying the needed material."

"I think my cows made better use from the feed given them by its addition. My cattle are in better condition in appearance and vitality. Their breeding is made surer by its use. I consider any dairyman should feed this mineral for the two above reasons."

"I fed it slightly over two months, beginning after January 10 last, to about 100 head of mixed cattle. They took to it readily but consumed a very noticeably less quantity of the mixture than they ordinarily would have, of straight salt. My cattle have come through a long, hard winter in excellent condition and I believe this mineral did its part and would no doubt be the means of correcting many adverse conditions, providing its cost did not preclude its use over properly extended periods."

"I ran 400 head of cattle, the majority of which are wintered on pasture, with a little cake during the month of February. I believe my cattle came through the winter in as good shape as stuff that was fed hay, but just how much I can attribute this to the phosphate, I cannot say. I had two lots of cattle, one was fed a 50-50 bone-meal salt, the other lot was fed a 30 percent phosphate salt mixture. The phosphate lot ate 50 percent less salt than the bone-meal salt lot." Mr. Spear ordered 400 pounds more mono-calcium.

Unquestionably the mono-calcium phosphate can be recommended to livestock growers as an efficient mineral to correct depraved appetites and to correct breeding trouble attributable to a mineral deficiency.

Chas. S. Llewellyn
Sheridan, Ct. Hs.

1934

Sheridan County Agricultural Agent

Cattle-Feeding Contracts: As a result of unfavorable prices for feeder cattle in 1933, an attempt was made to increase the net returns to the producer for his feeder cattle by having the range cattleman place his feeder steers on feed somewhere in the Corn Belt with a reliable feeder. Nearly 700 head were contracted for under this arrangement.

From the first shipment of cattle, 58 steers have been marketed. The initial weight of these steers was 923 pounds. The estimated market price at time of shipment was 4¢ per pound. The selling weight, after a moderate feeding period, was 1200 pounds and the sale price was \$6.35 per cwt. Selling the steers as feeders would have netted the grower about \$37 per head. Based on the owners' weight of 923 lbs. and the fat price of \$6.35, the return to the grower was \$58.61 per head, or a difference of over \$21 per steer.

Part of another shipment brought a price of \$6.50 per cwt. Figuring the estimated price of the feeder steer to have been \$4 per cwt. on the initial weight of 688 pounds, the net return to the producer, had the steer been sold as a feeder, would have been \$27.52. Selling the same steer fat at \$6.50 per cwt. on the initial weight of 688 pounds, the return to the grower was \$44.72, or a difference of \$17.20.

John A. Goe
Sheridan, Ct. Hs.

Wyoming, continued.

1936

Campbell County Agricultural Agent

Emergency Feeds: The Campbell County Agricultural Agent, by means of circular letter, news stories, farm visits, and office calls, encouraged ranchers to conserve all types of emergency feeds in order that a nucleus of their breeding herd might be maintained on the ranch. Technical information supplied by John J. McElroy, crops and soils specialist, and Tony Fellhauer, livestock specialist, concerning the feed value of various emergency feeds and the best method of handling to conserve feed value, was sent out to all ranchers.

Seven ranchers reported the planting of grain sorghums as an emergency feed.

These cooperators planted cane and sudan grass in the middle of July following a rain. They report from one-fourth to three-fourths a ton of feed per acre from these emergency plantings.

Six ranchers constructed trench silos and filled them with emergency feeds such as corn, Russian thistles, sun-flowers, and so forth.

Seven stockmen utilized cactus as an emergency feed.

Some of these men are using torches to burn the spines off the cactus and thereby utilize it on the ground. Others have gathered the cactus and put it in trench silos. This softens the spines and makes the cactus quite palatable.

Hundreds of Campbell County ranchers cut and stacked Russian thistles as an emergency feed.

There have been shipped into Campbell County 150 cars of hay and concentrates on certificates for reduced emergency rates on livestock feed as issued by the Campbell County Agricultural Agent. The following feeds were included in these shipments:

- 81 cars of cottonseed cake.
- 51 cars of hay.
- 8 cars of oats.
- 7 cars of mixed grains.
- 3 cars of corn.

F. E. Dominy
Gillette

Dehorning

ARIZONA

1936

Animal Husbandry Specialist

Dehorning: The range man is still hesitant regarding the practice of dehorning; however, each year shows that we are gradually approaching the day when dehorned cattle will be demanded. There is a marked desire among cattle feeders for dehorned cattle. Many feeders, if unable to purchase dehorned cattle on the range, dehorn immediately after arrival. An interesting example

Arizona, 1936, continued.

in this regard happened recently in one of our irrigated valleys. Some 500 head of steers came in from Mexico. These cattle were equally divided between two different feeders. One of the feeders dehorned his cattle soon after purchasing; the other desired to feed them with horns on. After both bunches of cattle had been on pasture a while a feeder buyer came into the community. He was shown the dehorned cattle first and soon purchased this group. He was then taken to the ranch where the horned cattle were on pasture, but he refused to even consider them even at a lower price, saying, "Why, those are Mexican cattle."

Good results have been obtained where fly repellent has been again applied the day following the operation of dehorning. Instruments that have proven most satisfactory to date are the spoon or hot iron for calves of smallest size, cylindrical clippers for calves of medium size and up to yearlings, and a saw from yearling age to 18 months.

Dehorning Demonstrations: In Pinal County, during the fall, a new type of demonstration was held. There being considerable interest in dehorning among cattle feeders in the Casa Grande section, it was decided to conduct an all-day demonstration in dehorning at a ranch adjoining Casa Grande. By this arrangement all of those interested could come to town, attend the demonstration any time during the day, and leave at will. Three hundred fifty head of cattle were dehorned in seven hours. Use of the squeeze chute was demonstrated at the same time.

C. U. Pickrell
Phoenix, PO Box 785

NEVADA

Humboldt & Northern Lander Counties District Agent

Dehorning Cattle: Butchers often say that horns and prime carcasses are seldom found on the same animal; meaning that many of the bruises on the carcass, which detract from its appearance and sale value, are caused by horns. Horned cattle generally bring 25 cents per cwt. less than the same grades of hornless cattle, and when there are plenty of cattle to be bought and the price low it is difficult to get buyers to look at horned stock. The earlier in the calf's life the horns are removed the better it is for the animal.

To avoid dehorning, some rangemen have turned to the use of bulls of the polled breeds. The removal of the horns through breeding is much more desirable than cutting them off. Before taking this step to secure polled animals, however, it is important to have all of the users of the community range decide to change to the polled animals. Dehorning bulls on a community range is not advisable unless all users of the range do it. However, if it cannot be agreed to dehorn all bulls, then the next best procedure would be to agree to tip the horns of all bulls.

The agent wrote letters and received 78 replies from cattle buyers throughout the States of Nevada and California. Those letters asked the buyer what he wanted in the way of feeder steers. Without exception they wanted dehorning stock. I took these letters to the leading stock growers in my district and, with this information direct from the buyers to back up my arguments for dehorning, the growers were caused to realize that the practice was essential.

Another thing that made the project go over with ease was the simple, stanchion type neck squeeze developed by the agent. The first one constructed

Nevada, 1933, continued.

was on the ranch of Steve Boggio, where his son and the agent built a squeeze at a cost of less than \$1 and had an animal dehorned in three hours after starting work on the plan.

After using the squeeze for a day with a number of ranchers present, places where improvements could be made were discussed and Clarence Hanson agreed to build one according to the improved plans. The Hanson squeeze is fast in operation, easy on the cattle, convenient, and costs \$5 to construct, using new material.

The interest created this spring resulted in the dehorning of every herd in the Paradise Valley district, and to my knowledge there is only one herd not dehorned in the entire county. This man has requested the agent to furnish a drawing of the plans taken from the Hanson squeeze so that he can construct one similar for the coming spring.

A large number used no chute whatever, throwing the animals with ropes and dehorning on the ground. This method is slow in operation and dangerous to the operators and animals. In checking over places where this crude method was used, it was found that the corral dust getting in the wound made when the horn was cut off caused more runny heads than where the animals were dehorned standing up and turned into clean pasture.

A miniature chute and neck squeeze, modeled after the one built on the Hanson ranch is being built so that it can be carried in the agent's car and when visiting ranches where no satisfactory equipment is installed for dehorning, the ranchers can see exactly how the Hanson Chute should be built.

Paul L. Maloney
Winnemucca

OREGON

1935

Sherman County Agricultural Agent:

Branding Cattle: A demonstration on branding cattle with the chemical branding fluid was requested on the Clarence Morrison and Bud Belshe farms with the results that these men are now using this method entirely. Approximately 15 samples were distributed and in all cases favorable results were secured.

Perry N. Johnston
Moro

Cattle Grading

ARIZONA

1935

Animal Husbandry Specialist

Grading Demonstration: With reference to grading and judging demonstrations, appreciation of Extension work has reached the point in this State where it is not now difficult to find producers who are willing to cooperate to the fullest extent in furnishing livestock and necessary equipment for a demonstration, but there are additional things to consider. Where the cattle from a single herd are used, and this herd has been under the same management for a number of years, it is very likely that there exists a uniformity in type. With this condition, it is not so easy to select animals between which there is a contrast sufficient for a demonstration. It is next to impossible and not highly desirable, to assemble animals from different herds for the purpose of a demonstration. While a stock show affords this comparison to a certain extent, it is not advisable here to carry on discussions as to merits to any great extent. The owner of a good animal is, of course, anxious to have his animal discussed, but the owner of the animal of lower grade does not always care to have the undesirable points brought out in public. The only satisfactory place for a demonstration is at the ranch. A grading demonstration is a bigger undertaking than might be expected upon first study. The writer has not yet been able to secure a sufficient number of animals for a demonstration without riding the range for several days in advance. Cooperation from owners of units where demonstrations have been held during the past year has been all that could be desired.

A demonstration on the grading and judging of beef cattle was held in September at the N S ranch in Lonesome Valley, Yavapai County. Twenty pens 20 x 20 were built, consisting of six barbed wires with many stays, and were designed as follows: One side of a large picket corral for the back side of the row of pens, wire fence for the front side, and the pens divided by barbed wire gates tied with ropes.

The entire labor cost of construction and removal was \$800.00. The demonstration was sponsored by the Yavapai County Cattle Growers' Association.

After riding the range for two days, three to five animals of the following grades and classes were selected, the selections being based upon grades recently established by the United States Department of Agriculture:

(A) FEEDER STEER CALVES

1. Fancy
2. Choice
3. Good
4. Medium
5. Common

Due to the fact that nothing but purebred bulls had been used for 20 years, and a system of close culling of females had been in use during that time, no sixth-place "Inferior" were found in the herd. This outfit markets its entire production as feeder calves, so no yearling steers were available, and five classes of yearling heifers were selected; also, five grades of breeding cows.

Arizona, 1935, continued.

The remaining pens were used as follows: Two pens, with cows of extreme type (both extremely good and extremely poor), with their calves; another, four generations of animals- a bull calf, his mother, his grandmother, and great grandmother; another with a calf from a purebred Guernsey Cow and from a purebred Hereford bull; a fifth with four cows, one representing the desired type, the other three showing different defects.

C. U. Pickrell
P. O. Box No. 285
Phoenix

NEW MEXICO

1932

Hidalgo County Agricultural Agent:

Cattle Grading: Cattle grading was the outstanding livestock result demonstration of the year, the interest in this work being shown by the attendance of 175 people at a cattle grading meeting held at the S. R. Dunagan ranch, the meeting being conducted by J. K. Wallace of the Department of Agriculture, and the Extension animal husbandman. A second meeting, held at the Cureton Walking X ranch north of Lordsburg for the benefit of the cattlemen of both Grant and Hidalgo Counties, showed that interest in this work was not confined to one section of the county, as 175 people also attended this meeting.

Excellent range cattle clearly showing the effects of years of good bulls and culling were furnished for the demonstrations by both Mr. Dunagan and the Curetons. The program included a talk on what the market wants, by Mr. Wallace, a discussion of diseases of livestock, by Dr. Black, and excellent demonstrations on selecting bulls, market classes and grades, and effects of breeding up, conducted by both. A ring of beef cows was judged at Dunagans, 24 men and two ladies turning in placings.

This made the seventh year that these grading demonstrations have been given in the county, and their merit is shown by the constantly increasing attendance and interest. The results of these meetings in terms of range cattle improvement cannot be accurately measured, but the following facts stand out: That there has been a constant improvement in the quality of the range cattle produced in the county since these demonstrations have been held, that practically all of the old Mexico-type of cattle have been eliminated in favor of the white-face, and that over 90 percent of the men who are ranching as a business are running purebred bulls.

One prominent ranchman stated to the agent that in his opinion these grading meetings alone were worth more to the cattle interests of the county than they had ever paid for Extension work.

L. C. Brown
Lordsburg

Grant County Agricultural Agent

Grading Demonstration: A grading demonstration was held on the ranch of Robert Royal early in September which was very successful from two viewpoints.

New Mexico, 1932, continued.

Mr. Royal has been in the registered business for eight years and each fall makes an exceptionally severe cut, throwing out every animal that won't come up to rigid standards in his grade herd. Females are watched then and should they bring unusually good calves, are placed in an extra pasture for observation the following year. With this history behind the herd, it was possible for Mr. Royal to put up a number of rings that were exceptionally valuable for grading.

The other factor that made the demonstration of special value was the very fine condition of the range, the density of the sod, and consequently the excellent physical condition of the cattle. Although Grant County, until then, was suffering from as serious a drought situation as it had gone through during 1934, it proved conclusively to the cattlemen that many of our drought periods are man-made and that controlled, intelligent use of ranges is one of the greatest and safest insurance plans evolved yet.

The meeting ended with a tour of inspection of the ranch, through pastures that had been just a few years ago completely denuded of most of the valuable type of grasses, but were now supporting cattle of the type just inspected.

Stuart Stirling
Silver City

WASHINGTON

1936

Animal Husbandry Specialist:

Cattle Feeding and Grading Demonstrations: More than 970 farmers and livestock men attended the 12 cattle grading and feeding demonstrations held throughout the eastern part of Washington, November 12 to 20. James K. Wallace, senior marketing specialist, Bureau of Agricultural Economics, Washington, D. C., discussed the livestock outlook and gave the grading demonstration, while the extension animal husbandman at these meetings gave information relative to cattle feeding, taking up the matter of rations to feed as well as the business side of cattle feeding. There was a keen interest at practically all of the meetings in both phases of the work, grading and cattle feeding.

One of the most interesting grading demonstrations was at White Swan on the Yakima Indian Reservation, where some 400 head of cattle, owned in common by the Yakima Indians, were sold by grade at their semi-annual auction. At this demonstration there were 325 people, including over 200 Indians. Numerous horses were in and out of the pens at the stockyards where the sorting and grading was being done, and many looked upon the day's work as a sort of rodeo. However, most of the Indian farmers were very observant and, it was felt, learned much from the grading of the cattle into various lots by class and by grade. The significant thing was, of course, that these cattle, after being graded, were sold at auction according to grade. This gave us an excellent opportunity to bring home the points that had been emphasized in the grading of the cattle. There were buyers at this auction in the afternoon from Seattle, Tacoma, Yakima, Portland, and points in California, in addition to local feeders. Prices netted were more than what would have been received had the cattle been shipped to Portland.

Con S. Maddox
State College of Washington
Pullman

WYOMING

1933

Animal Husbandry - Dairying Specialist:

Cattle Grading: Eight grading demonstrations and outlook meetings were held in five counties by the specialist.

In cooperation with stockmen in Niobrara, Carbon, Uinta, and Lincoln Counties, public grading demonstrations and outlook meetings were held during October and November, J. K. Wallace, marketing specialist for the Bureau of Agricultural Economics, assisting the livestock specialist. In all, seven meetings were held, attended by 548 ranchers. The following is taken from Mr. Wallace's report:

"The first grading demonstration in Wyoming was held at the Jim Christian ranch at Node, 12 miles from Lusk, on the Nebraska border. This is a famous old range cattle section, some of the earliest big outfits of the plains country having been established in the territory which centers where the boundaries of Nebraska, South Dakota, and Wyoming join. There were 110 people present from three counties of Wyoming, and five cars of Nebraskans came.

"Mr. Christian, who operates the old Tom Bell ranch, has about 600 richly bred Hereford cows and uses \$250 to \$400 bulls. His operations are a lesson in good breeding and handling. In connection with the demonstration, we weighed his April heifer calves and they averaged 476 pounds. We weighed his heifer yearlings and these averaged 845 pounds. He had their weights as of November 1, 1932, and they had gained 425 pounds, showing the fine quality of the grass on his understocked range. Mr. Christian annually sells his feeder calves to Ohio feeders at prices netting considerably above stockyard prices. A neighbor, Tom Hansen, weighed up 300 heifer calves at the close of the meeting. These averaged 417 pounds and went to an Ohio feeder at \$3.50 without shrink.

Mr. Christian, however, feeds phosphate to his stock and feeds better during the winter than his neighbor, which partly accounts for his 476-pound weights versus Hansen's 417-pound averages. Both were good, however. At the close of the meeting, Nebraska stockmen, as well as eight or ten Wyoming ranchers, asked county agent Reeves to hold demonstrations at their places next year.

J. R. Neale

State College of Agriculture
University of Wyoming
Laramie

Cattle Diseases

CALIFORNIA

1933

Shasta County Agricultural Agent

Goitre: Losses of calves from enlarged thyroids were reported in early spring by cattlemen of Hat Creek. A State veterinarian assisted the county agent in a thorough survey of five herds of dairy and beef stock. Blood samples were taken to eliminate abortions due to Bangs disease and it was finally determined that the chief cause of the trouble was an iodine deficiency, a trouble that has long been recognized in this area. After the evidence was complete a meeting of all interested stockmen was held on April 7, with an attendance of 40. It was explained that ground salt, which was being used on some farms, did not retain its iodine efficiency for any length of time. The testimony of several breeders indicated that the use of iodized block salt would remedy the trouble. A program of control on that basis was adopted by the stockmen present.

Liver Flukes: Repeated use of bluestone on infested meadows seems to be essential to the complete control of the snails implicated in the spread of this trouble. The soil treatments have been supplemented by the use of medicinal treatments of individual animals showing the effects of fluke infestation.

There was a marked outbreak of lambing paralysis in early spring that resulted in some loss before it could be corrected by a change in feeding and management.

B. J. Jones
Redding

1934

Modoc County Agricultural Agent

Osteomilitis or Bone Disease of Cattle: This disease is prevalent in the northeastern part of the county and during the drought purchase program a large percentage of the cattle condemned were affected with this trouble.

This disease has been effectively controlled by the use of steam bone meal.

Winter Calf Scours: Calf scours in new-born calves during the winter months has been a serious problem on many of the ranches. This trouble is most serious when cows have been fed for a long time on grass hay and when the snow has covered the ground for a long period of time. Many treatments have been tried, but none seem to be very effective. One of the best treatments, and which is a home remedy, consists of giving the calf affected one dose of the following: 3 tablespoons of castor oil, one teaspoon soda, one teaspoon ginger.

The winter scours mentioned above appear to be due to the lack of vitamins A. and D., on account of the types of feed and lack of sunshine. Geo. E. Williams, of Likely, California, was advised to try cod liver oil, which he did, and reported good results.

California, 1934, continued.

Doctor Rober Jay, B.A.I., and Mr. Stone of the Franklin Black Leg Company, also confirmed this theory that it is possible that cod liver oil may be effective for the control of the winter calf scours.

John C. Hays
Alturas.

1936

Madera County Agricultural Agent

Tuberculosis Test: The testing of beef cattle was bitterly opposed by a group of beef cattlemen who were guided in their actions by considerable misinformation and prejudice.

The cattlemen finally threw the matter into court where they were eventually defeated.

At the request of beef cattlemen who had cooperated in the tuberculosis eradication campaign, the Farm Bureau asked the cooperation of the Bureau of Animal Industry and of the U. S. Forest Service to have the Forest Service issue grazing permits on the National Forest to only cattle free from tuberculosis. This the Bureau of Animal Industry and Forest Service promptly did over the furious opposition of some of the cattlemen with untested cattle and their attorneys. This action, however, offered many of the members of the association opposing compulsory testing of beef cattle, the opportunity they had long been seeking to break away from the association and have their cattle tested. All of the cattle entering the Sierra National Forest north of the San Joaquin River were tested.

E. L. Garthwaite
Madera, County Exhibit

Sonoma County Agricultural Agent:

Beef Cattle Parasite: A case of ostertagia stomach worms of beef cattle in the Pine Flat region, which resulted in the loss of 15 or 20 head of cattle, was a recurrence of an epidemic which was suffered several years ago on this ranch but for which no remedy had then been found. Eleven steers which were in very poor shape were subjected to a 1 percent bluestone drench treatment for five treatments, five days apart. All but one of these recovered in satisfactory shape and became marketable. The last one recovering was not considered marketable at the time the owner made the report.

H. A. Weinland
Santa Rosa, Ct. Hs.

COLORADO

1933

Huerfano County Agricultural Agent

Cattle Diseases: Cattlemen in the Gardner district have been suffering considerable losses of cattle on the high ranges for a number of years. The same condition has repeated itself this year.

A good many causes have been suspected and a great many remedies tried, with only mild success. However, during the past year four very competent veterinarians have investigated the situation and have all come to the conclusion that Brisket disease is the largest contributing factor causing this large death loss.

Brisket disease is a dropsy condition due to heart exertion in extreme high altitudes, particularly during the summer grazing season. Symptoms are often manifested in swellings from the chin to the abdomen and quite often accompanied by extreme scouring. These conditions may not always be noticeable but in any event extreme heart dilation will be noticeable on post mortem examination.

The condition is not contagious and the only remedy for it is the breeding of resistant cattle. Cows producing calves that become affected should be sent over the block. Bulls should be purchased from high altitude herds, as calves from low altitude bulls are much more susceptible to Brisket disease. Even calves from high altitude cows and bulls are not always immune from the condition but are much more apt to be than calves from low altitude parents.

Local cattlemen can supply their bull needs from high altitude Hereford sources in Huerfano County and these bulls are of just as commendable breeding as can be obtained from any other source.

B. W. Allred
Walsenburg

1934

Douglas County Agricultural Agent

Parasite Control: L. R. Higby, of the Greenland Cattle Company, came to the office in May and asked about external parasites and their control. It was suggested that he build a dipping vat and dip all his cattle. I gave him Farmers Bulletin No. 1600, from which he obtained construction plans.

At the time of writing all cattle have been dipped once and the second "trip through" is starting. Mr. Higby says he is well pleased with the results and his cattle look exceptionally good.

To heat the water Mr. Higby used an old steam boiler that had, years ago, passed its usefulness as power for a thrasher. The engine was dismantled and a two-inch pipe run from the steam drum to one foot below the surface of the mix in the vat. A two-inch pipe was also led from the bottom of the boiler to the vat.

Each morning, while dipping the cattle, the boiler would be filled with 200 gallons of water and a fire started. This would soon create small amounts of steam and by the time the cattle were rounded up and in the corrals the mix

Colorado, 1934, continued.

in the vat would be tepid. The fire would then be drawn and the hot water from the boiler drained into the vat, and additional "dip" added.

This would raise the temperature of the mix to about body heat, and about 300 head would then be put through the vat.

The actual time occupied in dipping would be two to three hours, but 300 rounded up and returned to the pasture was a day's work.

I took several different cattlemen to the ranch during the dipping operations, and I anticipate that this vat will be a community affair this fall.

W. H. Gunther,
Castle Rock

MONTANA

1932

Prairie County Agricultural Agent:

Parasite Control: The winter of 1931 was a bad one on cattle and as spring opened up stockmen were all complaining about the number of lice on cattle. All herds were badly infested and losses had occurred. Information was sent out from the Extension office on treatment to keep the lice under control. In the late summer many inspections of cattle herds revealed that cattle were still badly infested with lice of two species. Stockmen were interviewed and cautioned about the condition of livestock. In communities where dipping plants were available the problem was easily solved, but in other sections where vats were not available, it meant the construction of vats or hand treatment.

In one locality near Crow Rock, stockmen were interviewed in regard to a community dipping plant and plans were laid for its construction, plans being furnished by the Extension office.

A total of 1600 head of cattle were treated under the control methods used, representing 13 farms.

C. E. Lewis
Terry

1933

Animal Husbandry Specialist

Mineral Deficiency: Many letters come to the specialist's office requesting information on different patented products used as cure-all for all kinds of cattle diseases. Recommendations have been made on methods of feeding minerals in the known mineral deficient areas. The experimental results at Bozeman and Huntley seem to indicate that there is very little difference between steamed bone-meal and mono-calcium phosphate as a mineral supplement in fattening lambs. County Agent Clarkson in Teton County has had good results in his known mineral deficient areas by feeding either one of these minerals with salt.

Sanders County seems to have an acute mineral deficiency on its range as well as on the irrigated farms. As yet, this has not been corrected by the supplemental feeding of minerals. Some trials with steamed bone-meal were made

Montana, 1933, continued.

with club calves this last season with beneficial results.

Cascade, Gallatin, and Blaine Counties have reported good results from feeding both steamed bone-meal and mono-calcium phosphate.

I. M. C. Anderson
Montana State College
Bozeman

NEW MEXICO

1933

San Miguel County Agricultural Agent:

Disease Control: The spring of 1933 was extremely windy and dry and feed, including grass, was very scarce, the result being that cattle came through the winter in a very poor condition.

In June many native ranchmen in the mountain sections requested help in checking cattle losses. The agent made three different trips to as many communities in an effort to diagnose the trouble. On two of these trips the local veterinarian accompanied the agent.

It was very difficult to determine just what the trouble was. However, hemorrhagic septicemia was suspected and ranchmen were advised to vaccinate as a precaution. Some two or three ranchmen questioned the trouble as being due to this disease and so the veterinarian and the agent posted one animal and sent tissue and blood to the laboratory for a definite diagnosis. The report coming from the laboratory was to the effect that the cattle had a mixed infection, along with hemorrhagic septicemia. Approximately 500 head of cattle were vaccinated at this time.

Later in the summer there was an outbreak of disease in the mountain sections east of Pecos and extending to Rociada. In this instance there was no chance of the trouble being oak poisoning as the cattle were in good condition. The agent made a visit to this section and found the trouble to be caused by hemorrhagic septicemia, gave a demonstration on vaccinating and furnished syringes and vaccine for immunizing their cattle.

Approximately 550 head of cattle in these sections were immunized against this disease. In every case ranchmen reported that the losses ceased, with the exception of some few ranchmen who failed to vaccinate.

Lorin F. Jones
Las Vegas

OREGON

1935

Lake County Agricultural Agent

Cattle Poisoning: Fourteen head of cattle belonging to C. D. Arthur, Drews Valley, out of 22 head that ate grasshopper poison, died the latter part of March. Mr. Arthur had moved his cattle into the ranch at Drews Valley formerly leased by Tim Twomey, sheepman, to feed hay. The cattle broke into an old

Oregon, 1935, continued.

log shack where Mr. Twomey had left a couple sacks of grasshopper poison with the foregoing disastrous results. Nine head of the cattle showing symptoms were inoculated by the county agent, using nine grams of Sodium Thiosulphate in 20 cc's of sterile water. Injections were made in the jugular vein of the affected cattle. All except two of the treated animals got well. The two that were treated and died were so far gone that it was apparent that there was no chance for their recovery.

This grasshopper poison had been left in this old shack since poisoning operations in 1931. At that time Mr. Twomey had been given complete instructions as to how to properly broadcast the poison bran mash bait. He was cautioned to bury or return any bait not used. All livestockmen using any kind of poison bait material have always been cautioned by letter and personal contact by the county agent's office relative to the proper care in handling and disposing of poison bait material.

Victor W. Johnson
Lakeview

1936

Animal Husbandry Specialist

Liver Fluke Control: During the year just passed, Dr. Robert Jay, of the Bureau of Animal Industry, was placed in charge of a liver fluke control program in the State. This program involved the draining of swampy areas and the spreading of copper sulphate on other sections with the idea of controlling the snail that harbors the liver fluke. The construction of drainage ditches in the swampy areas largely destroys the breeding grounds for snails. Something like 150 ranches were benefited by this in six counties of the State. It is estimated that some 20,000 acres have been treated in this manner as a result of the program. In addition to the draining of these lands, a large quantity of copper sulphate was furnished by the government through the county agent to be spread along ditches and streams that harbored the snail. It is believed that this will have a far-reaching effect on the control of this important disease among sheep and cattle in these areas.

H. A. Lindgren
Oregon State Agricultural College
Corvallis

Gilliam County Agricultural Agent

Beef Cattle: When the county agent came to Gilliam County a little over three years ago, very few cattlemen practiced vaccination for blackleg. Losses were not heavy but they often occurred. Through demonstration of blackleg vaccination, supplying of syringes, distribution of vaccine and a general educational program emphasizing the importance of vaccination, carried on by the county agent, almost every stockman has adopted the practice of vaccination each year. Losses have been almost completely stopped.

The last losses from blackleg known in Gilliam County occurred in the spring of 1936. A serious outbreak of the disease occurred late in November 1935 among cattle running on the John Day River when at least 20 head were lost by three stockmen. During December the county agent contacted every stockman in

Oregon, 1936, continued.

that area and assisted in vaccination of all of the cattle there. Three vaccinating syringes kept in the county agent's office for use of stockmen are almost in constant use.

R. M. McKennon
J. M. Stein
Arnold C. Ebert
Condon

WYOMING

1932

Campbell County Agricultural Agent

Contagious Abortion: March 10, Walt Monnet of Little Powder River, came in and reported that he was losing calves and thought he had contagious abortion in his herd. On March 14, Dan Ingraham, who was then county-agent-at-large, went down to the Monnett ranch with me on Sunday. Mr. Monnett had six of the 30 odd cows that had lost their calves in the corral. We drew duplicate blood samples from these cows, sending one set of samples to Dr. Port, State veterinarian at Cheyenne, and one set to Dr. Lee, research pathologist at Laramie. They both reported that No. 1 cow was negative, but the other five were positive reactors. However, while we were at the Monnett ranch drawing the blood samples, I talked with Mr. Monnett about the possibility that his losses were due to mineral deficiency and suggested that he start feeding steamed bone meal at once. He agreed to do this and asked me to order 500 pounds for him. I did this and when the meal arrived I had Mr. Monnett mix the 500 pounds with 250 pounds of salt and put it out where all the cattle could have free access to it. Of course, this was a stronger mixture than we would advise for continuous feeding, but my object was to get a slug of the mineral into the pregnant cows right now. Well, the result was that within 10 days from the time we started feeding the mineral, Mr. Monnett's calf losses had entirely stopped. Perhaps the mineral didn't do it, but I am convinced that it did.

Disease Control: During the first part of September, Hemorrhagic Septicemia developed in a number of herds in the south half of the county. Several trips were made for diagnostic purposes. Vaccination of sick animals with Hemorrhagic septicemia bacterin was recommended in all cases. Results have been satisfactory in all herds. Vaccination of exposed animals with Hemorrhagic Septicemia aggressin was recommended. Otis Wright of Savageton had one steer that was in such bad condition that he and his neighbors said they wouldn't give a nickel for him when we vaccinated him with the bacterin. Mr. Wright now reports that the steer is coming along fine and will no doubt more than pay for all the vaccine he has used.

G. G. Clark
Gillette

Summary of Range-Livestock and Range-
Management Extension Work in the Eleven
Western States 1932 to 1936, Inclusive

Part I, Section 1



*This circular is stapled in three
separate sections as follows:*

- (1) *Part I, Section 1.*
- (2) *Part I, Sections 2 and 3.*
- (3) *Part II, Sections 1 and 2.*

UNITED STATES DEPARTMENT OF AGRICULTURE

Extension Service C. W. WARBURTON *Director*

REUBEN BRIGHAM *Assistant Director*

Division of Cooperative Extension C. B. SMITH *Chief*

Washington, D. C.